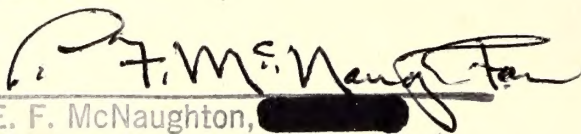


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Certain Mounds and Village Sites in Ohio

ILLUSTRATED

BY

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Director, Ohio State Archaeological and Historical Museum.

VOLUME IV

COLUMBUS, OHIO:
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PREFACE

"Certain Mounds and Village Sites in Ohio, Volume IV, presented herewith, comprises the following monographs:

"The Campbell Island Village Site."

"The Wright Group of Prehistoric Earthworks."

"Exploration of the Ginther Mound."

"Explorations of the Hopewell Group of Prehistoric Earthworks."

The present Volume, the fourth in the series entitled "Certain Mounds and Village Sites in Ohio, comprising the examination of four distinct prehistoric sites by H. C. Shetrone, Curator of Archaeology, aims to afford the reader and student of Ohio Archaeology the results of Explorations of Prehistoric Mounds and Village Sites in the State, as conducted under the auspices of the Ohio State Archaeological and Historical Society. The locations described are those examined subsequent to the Publication of Volume III, 1922, and comprise all exploration work of the Society from that time up to and including the Field Work of the first half of 1925.

WILLIAM C. MILLS.

Museum and Library Building, Columbus, Ohio, April, 1926.



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Certain Mounds and Village Sites in Ohio

VOL. 4 PART 1

The Campbell Island Village Site —and the— Hine Mound and Village Site

EXAMINED BY

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Columbus, Ohio
The F. J. Heer Printing Co.
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**EXPLORATIONS OF THE CAMPBELL ISLAND VIL-
LAGE SITE AND THE HINE MOUND
AND VILLAGE SITE**

BY H. C. SHETRONE,
Curator of Archaeology

TRANSMITTAL OF REPORT

JUNE 11, 1923.

PROFESSOR WILLIAM C. MILLS, *Director,*
Ohio State Archaeological and Historical Museum.

MY DEAR PROFESSOR MILLS:

I have the honor to submit for your approval a condensed report of the examination of the Campbell Island Village Site and Hine Mound and Village Site, located near Hamilton, Butler County, Ohio.

Very truly yours,
H. C. SHETRONE,
Curator.

THE CAMPBELL ISLAND SITE

Late in the summer of 1921, Dr. H. L. Good, of Hamilton, Ohio, brought to the attention of the Museum authorities the fact that marked evidences of prehistoric human occupation exist on what is known as Campbell Island, in the Miami river at the northern edge of the city of Hamilton; and also on the farm of George Hine, five miles south of Hamilton, on the west side of the river. In view of the fact that Dr. Good had interested himself to the extent of obtaining exploration privileges, the Director of the Museum deemed the occasion favorable for obtaining definite information regarding the pre-historic occupation of

Butler county, and instructed the writer to devote the remainder of the exploration season to the examination of these sites.

Campbell Island was named for Lewis D. Campbell, the early owner of the land, who was an uncle of Honorable James E. Campbell, former governor of Ohio, and at this time president of the Ohio State Archaeological and Historical Society. The term island is something of a misnomer in this instance, since the site is not a true, or natural island, but owes its origin to the fact that early in the nineteenth century the river, at a point about three miles north of the city, changed its course and made for itself a new channel to the westward. At the south end of the island the stream assumes its regular course, leaving the abandoned channel to form the eastern boundary of the thus created island, of several hundred acres extent.

It is upon the elevated southern portion of the island that remains of prehistoric human occupation are found. The site presents the anomaly of being located on the eastern side of the river, whereas it formerly lay on the west; and furthermore, as a result of the flood of 1913, it is covered by a deposit of sand and silt to a depth of from three to eight inches, so that even where the soil is under cultivation, not a vestige of human handiwork is to be seen, and surface scrutiny would give no hint of the underlying remains of human occupation.

The Campbell Island site, of limited extent, at best, is in great part occupied by the farm-house with its numerous barns and buildings, so that only restricted portions were available for examination. The accompanying map shows the portions excavated and

suggests the location and extent of the remaining unexplored areas. While the available strip lying to the south of the farm-house produced one burial and a number of storage pits, it was in the feed-lot to the northeast of the large barn that the more important results were obtained. This area, it will be noted on the map, apparently comprises an oval space trending north and south for a distance of something over 200 feet and having a width of approximately 100 feet. The barn-lot which, owing to graded driveways and other obstructions, could not be examined, apparently comprises practically one-half of the richest portion of the occupied area.

The feed-lot area produced a total of 20 burials and 17 storage-pits; its southern extension, across the barn-lot, four pits and a fireplace; and the strip extending along the bank of the old river channel, to the south of the farm-house, one burial and 14 pits. There seems to have been no definite grouping of burials, nor any particular relationship between location of burials and



FIG. 1. Pottery Vessel from Burial Number 1; (1-3).

storage or refuse-pits; however, it may be of significance that practically all burials in the feed-lot area were orientated toward the east, northeast and southeast, as shown on the map. The burial found within the strip to the south of the farm-house had the head of

the enclosed skeleton almost directly toward the west

The depth at which burials were placed varied from those lying partly within the plow-line to those placed a trifle more than two feet below the surface.

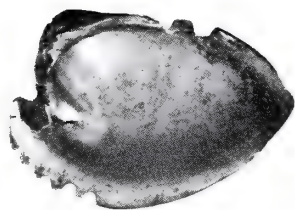


FIG. 2. Decorated Shell
Spoon from above ves-
sel (1-3).

Of the 21 burials uncovered, 15 lay extended at length upon the back; two lay upon the back with knees drawn upward; three were of undetermined position owing to recent disturbance; and one skeleton, disarticulated and incomplete, was found in a refuse pit. Of the total of 21, 12 were adults, two adolescents, and seven were children ranging from infancy to ten years of age. Five of the 21 had pottery vessels placed with them, while four others were accompanied by minor artifacts. Of the total number of burials, one had been disturbed by the depositing of a later burial, and two had been partly displaced in the construction of storage-pits. A single burial was partial, indicating re-burial.

THE BURIALS IN DETAIL

Burial Number 1 — This grave contained the skeleton of a child of about four years of age, extended upon the back, with head almost due east; with it was an earthenware pot (Fig. 1) of about three pints capacity, having four handles. Within the pot, was a mussel-shell spoon (Fig. 2) decorated with notches cut upon its edges.

Burial Number 2 — Skeleton of a child (Fig. 3) of approximately five years old, extended upon the back with head toward the east. A pottery-vessel (Fig. 4) of one quart capacity, having two handles and a scal-

loped rim, lay alongside the skull at the right. This vessel contained a plain mussel-shell spoon.



FIG. 3. Skeleton of a Child with Vessel; Burial number 2.

Burial Number 3 — Skeleton of an adult (Fig. 5), extended upon the back, with head toward the north-east. At the abdominal region was found a triangular arrow-point of drab flint. This burial and the two preceding ones were at a depth of two feet below the surface.



FIG. 4. Pottery vessel found with above Burial (1-4).

Burial Number 4 — An adult skeleton, apparently buried extended upon the back, with head a trifle north of east. The original burial lay only one foot below the surface,

but bones of the legs and feet had been removed in digging the grave for burial Number 3, and were found at a depth of two feet below the surface, beneath the skeleton of the last-named burial.

Burial Number 5—Partial skeleton of an adult, found deposited in refuse pit Number 3.

Burial Number 6—Skeleton of an infant, badly decomposed; placed extended upon the back, with head toward the northeast. No artifacts.



FIG. 5. Skeleton of an adult; Burial number 3.

Burial Number 7—Just across the fence dividing the feed-lot from the barnyard and within the latter, there had been noted a year or two previously, a burial, from which workmen, in re-setting the fence, had removed a shell container. As the burial had not been further molested, it was felt that so small an encroachment upon the forbidden barnyard area was justified, and the skeleton accordingly was exposed. The burial was that of an adult, extended horizontally, with head toward the southeast. Alongside the left forearm lay a perforated canine tooth of the black bear. The shell container, now in the collection of Dr. H. Lee Good, of Hamilton, measures 11 inches in length and is made from the *Fulgur perversum*. It is shown as Fig. 6.

Burial Number 8—This grave contained the skeleton of a youth of perhaps 16 years, and was one of the more interesting of the several uncovered. It lay upon the back, with head a trifle south of east, and with the knees drawn upward and backward, as shown in the

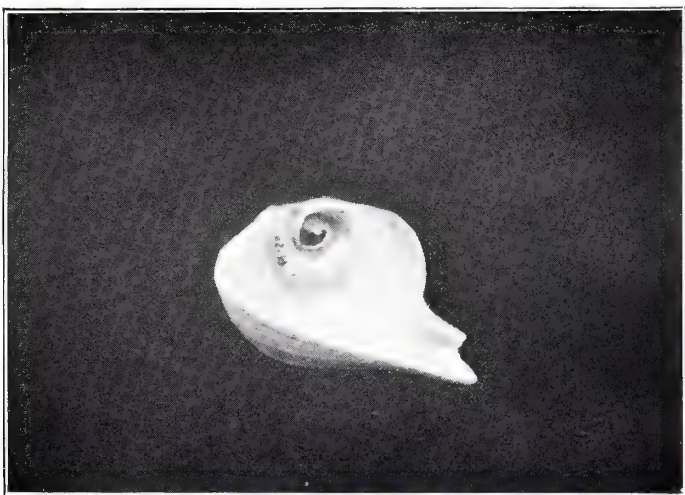


FIG. 6. Ocean-shell Container, found with Burial number 7. (1-8).

cut, Fig. 7. The depth of this burial was so slight that the skull was but 10 inches, and the knees but seven inches, below the surface. At the pelvis lay a small earthenware pot, of less than one quart capacity and without handles. The type of this vessel, as well as its decorative imprint, is somewhat different from the typical vessels of the site. Alongside the left ear was found a short spool-shaped ear ornament (Fig. 8) made from soft reddish stone, closely resembling both in size and form the spool-shaped ear ornaments of copper found with the burials of the Hopewell culture group.

Burial Number 9—Adult skeleton, presumably placed at length upon the back, head toward the north-



FIG. 7. Flexed Skeleton with Vessel and Ear Ornament; Burial number 8.

east. An interesting feature of this burial is the fact that a subsequently constructed storage pit had resulted in the displacement and removal of the lower portions of the skeleton, as shown in the cut, Fig. 9. The burial was at a depth of two feet.

Burial Number 10—An incomplete adult skeleton, placed at length upon the back with head toward the east; skull, cervical vertebrae and feet bones absent; depth of burial, a trifle less than two feet.



FIG. 8. Stone Ear Ornament found with Burial No. 8. (full size).

Burial Number 11—Skeleton of an infant, ap-

parently only a few weeks old; extended burial, head toward the east.

Burial Number 12 — Adult skeleton, extended upon back with head toward the northeast; burial so near the surface that cultivation had dislodged the skull and other bones.



FIG. 9. Burial Number 9, lower portions of which were disturbed by Pit.

Burial Number 13 — Skeleton of a child, extended burial with head toward the southeast; had been disturbed by the plow.

Burial Number 14 — Adult skeleton, placed horizontally at length, head toward the southeast.

Burial Number 15 — Skeleton of a youth, extended upon the back with head to the northeast. An interesting vessel (Fig. 10) of about three pints capacity, lay at the right side of the skull.

Burial Number 16—Skeleton of an adult, lying upon the back with knees drawn backward and upward, and with left forearm across the body. The orientation of this skeleton was unusual for the site, the head being toward the west. The skeleton presented an interesting pathological condition of the teeth (Fig. 11).



FIG. 10. Pottery vessel found with Burial number 15 (1-3).

Burial Number 17—Infant, extended burial, with head to the southeast; at the pelvis reposed two triangular arrow-points of drab-colored flint.

Burial Number 18—Adult, badly decomposed as a result of shallow grave; extended burial, with head toward the southeast.

Burial Number 19—This grave furnished the second example for the site of a burial disturbed by the construction of a storage-pit. In this instance the body had been deposited upon large slabs of limestone, and the digging of the pit had removed the lower one-half of the skeleton, including the pelvis. The cut, (Fig. 12) shows the slabs in place with the skull as it lay when found, but through an oversight, the remaining skeletal parts were removed before the photograph was made. The edge of the pit, as it impinged upon the burial, may be seen in the cut.

Burial Number 20—Skeleton of an adult, extended upon the back, with head toward the southeast; this skeleton lay in a very shallow grave and was badly decomposed. With it were several bone implements, including an awl, made from a leg-bone of the deer.

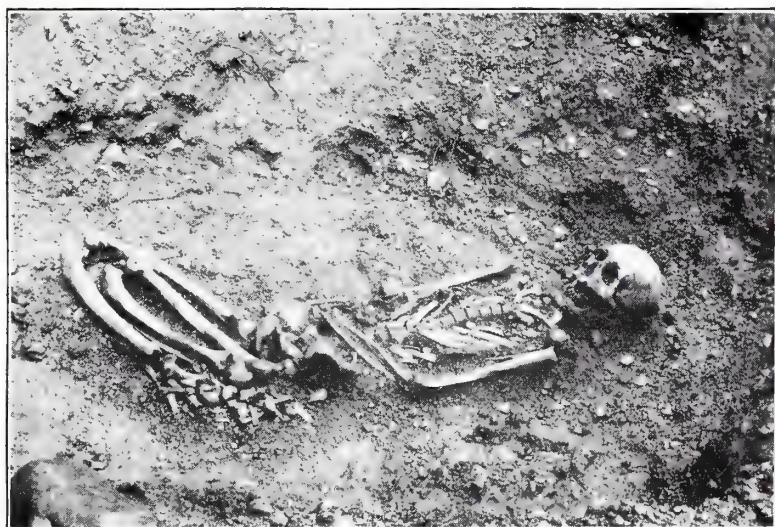


FIG. 11. Flexed Skeleton of Burial number 16.



FIG. 12. Skull of Burial number 19; the Burial was placed upon flat stones; lower portions removed in digging a storage Pit.

Burial Number 21 — Skeleton of an infant, extended upon the back, head to the northeast; shallow grave and badly decomposed skeletal remains.

THE STORAGE-PITS

The storage pits, cache pits or refuse pits, as they are variously termed, as found in the Campbell Island site, were quite similar to those found in other sites of the culture group in Ohio, although, owing to the lesser importance and size of the site under consideration, they perhaps were not so large nor so carefully constructed. The largest of the 35 pits examined measured three and one-half feet in diameter at the top, was five feet in depth, and tapered slightly inward to the flat bottom. It was filled with the characteristic strata of earth, organic remains, sand and so forth, while upon the bottom, to a depth of 10 inches, lay a deposit of charred shelled corn and beans. Almost a bushel of the intermixed corn and beans was removed and was found to be in a very gratifying condition, the greater part of the grains retaining their natural forms. Numerous animal and bird bones were taken from the upper strata of this pit, and many fragments of the characteristic pottery-ware were recovered.

The refuse pits were the principal source of the implements, ornaments and pottery-fragments obtained from the site, among the last-named being an extremely large and interesting broken vessel which afforded a complete restoration, and a second vessel, almost as large, which had been fractured and dumped into the pit.

In the portion of the site extending to the southward of the barnyard there was disclosed a fire-place, five

feet in diameter. This was not a specialized structure, such as occasionally are found in sites of the culture group, but merely an open fire-bed, occupying the level unmodified surface of the ground. Within the ashes resulting from its use were found fragments of pottery-ware, broken bone scrapers, mussel-shells and animal bones.

ARTIFACTS FROM THE SITE

Pottery-ware — Potsherds and fragments of pots, mostly from the large handled cooking vessels, were everywhere in evidence throughout the site. Fig. 13 illustrates an unusually interesting vessel, of large size, which was found by Dr. H. L. Good, previous to these explorations, where it had been partly exposed through caving off of the terrace in which it lay. Apparently the vessel had been thrown into a pit, upon being broken, the break being in the nature of a vertical crack or split, thus leaving the pot in two practically entire sections. It was presented by Dr. Good to the Museum, where the restoration was made. The vessel measures 17 inches in height and $14\frac{1}{2}$ inches in diameter.

A second extremely large and very unusual vessel, taken by our survey from a pit in the feed-lot section, is shown as Fig. 14. This pot, which has the extraordinary measurements of $17\frac{3}{4}$ inches in diameter and $12\frac{3}{4}$ inches in height, has a capacity of something near five gallons. The walls average less than one-eighth of an inch in thickness and in places are as little as one-twelfth of an inch. The entire vessel weighs a few ounces over five pounds. It will be noted that in type, as well as in size, this vessel does not conform to the characteristic pottery-ware of the culture group. It is

without handles, its horizontal measurement as compared with the vertical is much greater, and the character of its component material is different. Instead of the rather coarse clay, tempered with granulated shell,



FIG. 13. Large Pottery Vessel found by Dr. H. L. Good in a Storage Pit (1-5).

which usually burns to a reddish hue, this vessel is made from a very fine and smooth slip, without visible tempering material, and as a result of firing has a dark brown to black color. Tests of fragments show, despite their thinness, extreme strength and resistance to use

and exposure. The vessel apparently had been cracked or broken, and the entire residue thrown into the refuse pit. Several pieces were as much as one foot across, and by careful search all except some small fragments were recovered, making possible a complete restoration. The vessel is simply decorated around its greater circumference by incised or impressed vertical and hori-



FIG. 14. Large Vessel taken from Refuse Pit in Feed-lot section (1-5).

zontal lines, arranged somewhat shield-like as to pattern. All traces of fabric or basketry container, that may have been used in its manufacture, have been removed. Professor C. B. Harrop, of the Department of Ceramic Engineering of Ohio State University, to whom the vessel was submitted for examination, pronounces it as most exceptional from a primitive ceramic viewpoint. It was a considerable achievement, he points

out, for the primitive potter to be able to fashion so large a vessel with so comparatively thin walls, and to retain its form until firing could be effected.

Flint Implements — Implements chipped from flint comprise the projectile points both of the stemmed-and-notched and the triangular unnotched varieties; knives and scrapers of the notched and unnotched lanceolate types; drills or perforators; and the flake knives. For the last-named, the Flint Ridge variegated flint mostly was used, while in the preceding forms the material for the most part is the southern Ohio gray and drab chert. None of the types present differences over those from other sites of the culture. Representative specimens are shown as Fig. 15.

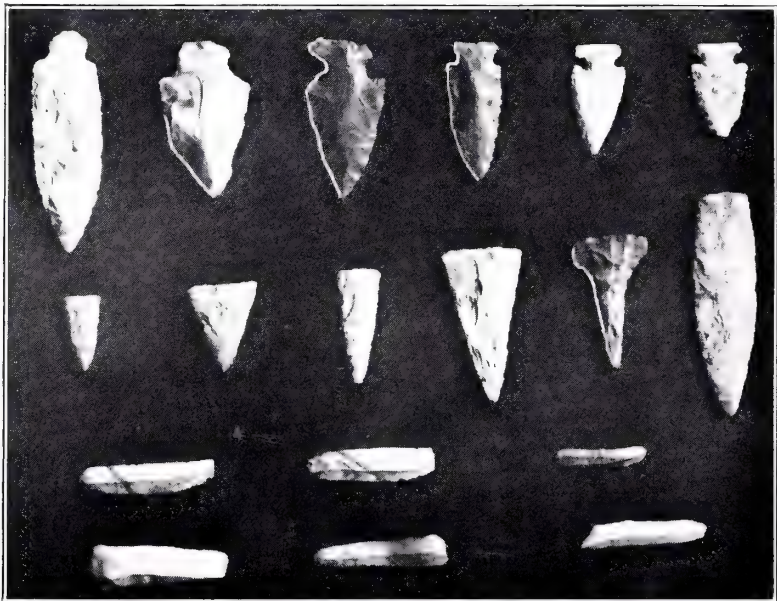


FIG. 15. Types of Flint Implements found throughout the Village (1-3).

Stone Implements — The celt, or un-grooved axe (Fig. 16) and the common hammerstone, or hand-hammer, (Fig. 17), comprise practically the only types of pecked and ground stone implements found in the site. Celts were not numerous, but the hammer-stones were fairly abundant.



FIG. 16. Types of Stone Celts found with Burials and throughout the site (1-4).

Implements of Bone — The principal type made from bone found in the site are the awls, the elongated scrapers or beamers, and the hoes or digging implements. The bone awls are mainly of three types — those made from the ulna of the wild

turkey and other large birds; those fashioned from the metapodial (and occasionally from other leg-bones) of the deer; and those made from splints and split strips of various animals and bird bones. These forms are shown in the cut, Fig. 18. A single example of the long curved bodkin-like needle, with the perforated base for accommodation of the thread, was found. Specimens of the scraper — one made from the metapodial bone and one from the femur of the deer, are shown in Fig. 19. The shoulder blades of the deer and the elk appear to have been the favorite bones used by inhabitants of the site as hoes. Not infrequently these are perforated,

apparently to facilitate attachment of handles, as shown in the cut, (Fig. 20).

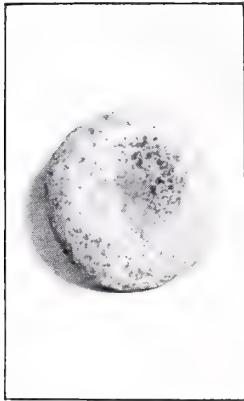


FIG. 17. Type of Hammer-stone found in the Refuse Pits (1-4).

Shell Implements—Hoes, scrapers and spoons, or ladles, are the three forms commonly made from shell, as found in the Campbell site. The last-named is illustrated in connection with the description of pottery vessels found with burials; the hoes and scrapers are shown as Fig. 21. In the former, the cutting edge of the implement often is strikingly worn, showing energetic use; in the scrapers, as will be noted, the margin of the shell is ground away to form a straight or slightly curved line at the point of contact with the object or material to be shaped.



FIG. 18 Types of Bone Awls, found throughout the Village Site (1-3).

Implements of antler — The most striking type of antler implement found in the site is the large mattock-like digging implement, made from the beam or a correspondingly rather large section of elk antler. These are illustrated in Fig. 22, and are entirely similar to



FIG. 19. Types of Bone Scrapers found in the Refuse Pits (1-5).

those found at the Madisonville site. The lower portion of the implement, corresponding to the cutting edge, is cut partly away, to leave a curved bit, while the projection higher up, resulting from the removal of a tine, apparently served as a stay for the thong which, passing around it, helped to secure the handle to the poll of the implement. Other forms of antler implements are the chisel and the hollow point (Fig. 23), the flint-chipping implement and the arrow-point shown as Fig. 24. An interesting digging implement, in the form of a hoe, is shown as Fig. 25. This notched specimen, chipped from an argillaceous rock, is the only one

of the kind found in the site.

Tobacco Pipes — But three specimens of pipes were found in the site — two of them, a small cubical form and an unfinished L-shaped specimen, both of sandstone, (Fig. 26), taken by our survey from refuse pits, and a finely made platform type, (Fig. 27), taken from

a pit located beneath the straw-stack by Dr. H. L. Good, subsequent to these explorations. The last-named is made of limestone.

Other Specimens From the Site—In Fig. 28 are shown a perforated shell disk, one and three-fourths inches in diameter; a polished splanchnic bone of the



FIG. 20. Hoe-blades, made from Shoulder-blades of Elk and Deer 1-5).

raccoon; three beaver tusks, used as chisels or knives; an ornament made from a section of the jaw of the gray wolf; and a perforated canine tooth of the black bear. A cache of 72 unfinished projectile points, of grayish-colored chert, was found in one of the refuse pits in the feed-lot.

That the Campbell Island site was not a particularly prosperous settlement is indicated by the scarcity of ob-

jects of ornament, even the common bone bead, usually so abundant, being almost altogether absent.

Animal and Bird Bones—It was hoped that the buffalo might be identified among the skeletal remains found in the refuse pits of the site, but, although found at the Madisonville site, they were altogether lacking. Bones of animals and birds found and identified at the Campbell Island site are as follows: elk, deer, black bear, wolf, mountain lion, Indian dog, wild cat, gray fox, raccoon, beaver, otter, ground hog, skunk, opossum, gray squirrel, box turtle, wild turkey and wild duck.

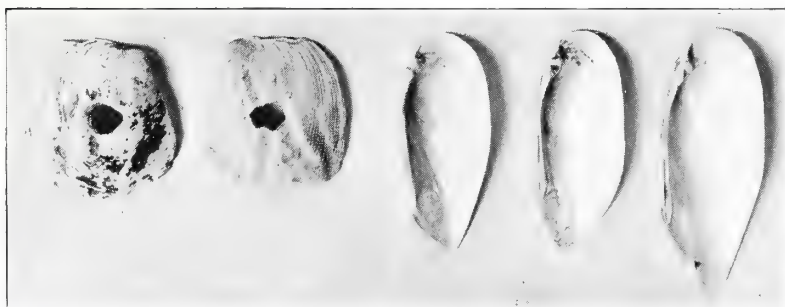


FIG. 21. Shell Scrapers and Shell Hoes, found in the Refuse Pits (1-3).

THE HINE MOUND AND VILLAGE SITE

The Hine Mound and Village Site are located upon the farm of Mr. George Hine, about five miles south of Hamilton, in Ross township, Butler county, Ohio. They occupy a rather strategic position, the plateau-like terrace on which they are situated deriving natural protection on the east from the declivitous descent to the Great Miami River, and on the south and southwest from an almost equally abrupt descent to the bed of a tributary stream from the northwest. Since the pre-

historic occupation of the site, however, the Miami river, as at Campbell Island, has changed its course and



FIG. 22. Mattock-like Implements of Elk-horn, from the Refuse Pits (1-5).

now occupies a new channel a mile or more to the eastward.

After completion of the examination of the Campbell Island site, the survey spent ten days in a pre-

liminary examination of the Hine mound and site, with the results herewith recorded. In view of the fact that



FIG. 23. Antler Implement and Chisel, from Refuse Pits (1-3).

the latter site proved to be similar in every way to the Campbell Island site, and that both are attributable to the same culture group of Ohio aborigines, it is deemed

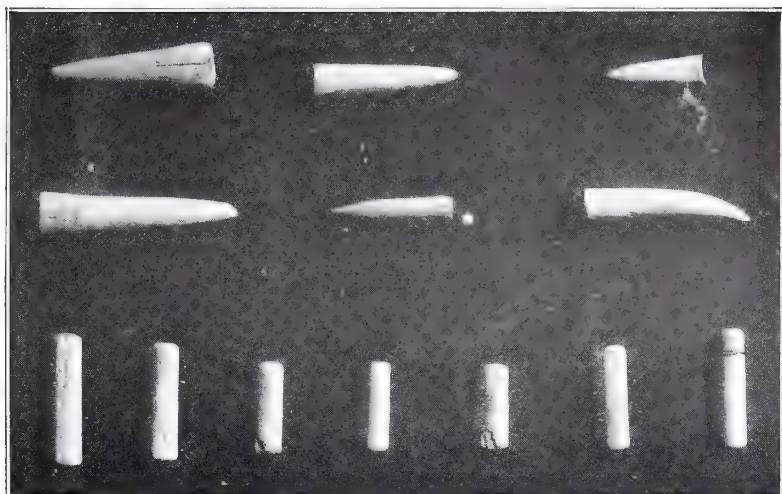


FIG. 24. Antler Points and Flint-chippers, from Refuse Pits (1-3).

proper to include the results of their examinations in the same report.

According to information afforded by Mr. Hine, the present owner of the land, the Hine site must have been

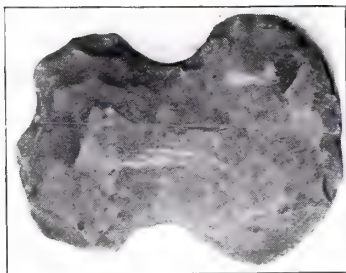


FIG. 25. A Chipped and Notched Stone Hoe; from a Refuse Pit (1-3).

of considerable extent and importance. Mr. Hine declares that during the upwards of a half century that he has lived upon the farm, and throughout the preceding years of cultivation by his father, at least one hundred skeletons have been dislodged by the plow, many of which were accompanied by

pottery vessels. According to his observations — and this is borne out by the examination made by our survey — practically all burials were in extremely shallow graves. A number of graves which had been practically eradicated by the plow were located, but none that lay deeper were to be found within the short time at our disposal. A few refuse pits, and a considerable area of refuse-bearing soil

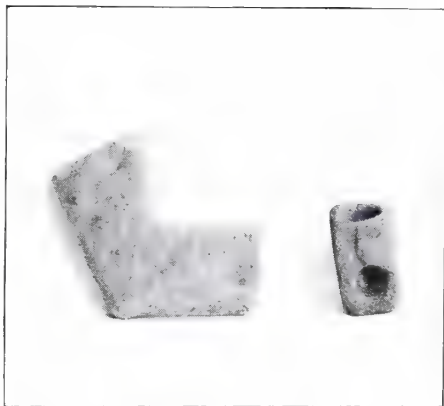


FIG. 26. Stone Tobacco Pipes from Refuse Pits (1-3).

were examined with the result that a representative series of implements was obtained. Practically all the

types secured from the Campbell Island site were found, although in much fewer numbers. An interesting discovery was that of the entire skeleton of the Indian dog,

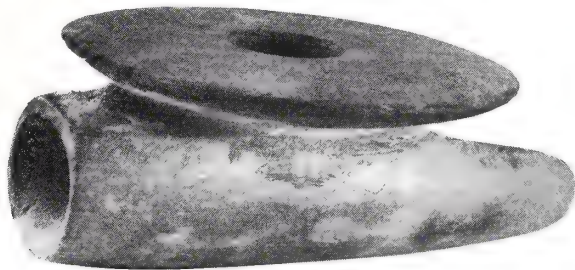


FIG. 27. Platform type of Tobacco Pipe, from a Refuse Pit (full size).

which was found buried in the refuse deposit above referred to, at a depth of 15 inches below the surface.

In connection with the Hine village site is a burial mound, which was found to be approximately 60 feet



FIG. 28. Objects made from Shell, Bone and Teeth; from Refuse Pits (1-3).

in diameter and slightly less than seven feet in height at its apex. There had been some doubt as to whether this elevation was an artificial mound or merely one of the gravel kames not uncommon in the vicinity. It was found to be artificial in its entirety, and to be con-

structed of the earth and soil of the surrounding village. Occupation of the site had both preceded and followed the erection of the mound; as shown by habitation evidences and refuse pits on the original surface and by a grave dug into the structure near its apex.

In view of the fact that as a rule burial mounds of the culture, where they are found in connection with habitations sites, contain many burials, it was expected that the Hine mound would yield profusely in skeletal remains. It proved to be an exception, however, in this respect, and was found to contain only five burials.

Burial Number 1 — At a distance of ten feet from the eastern margin of the mound was found *Burial Number 1*. It was that of a young adult, the skeleton extended upon the back, with the head toward the northeast. The burial, as it was uncovered, is shown as Fig. 29. A fine pottery vessel, decorated with looped lines about the neck, lay



FIG. 29 Burial Number 1 of the Hine Mound.

just above the right shoulder of the skeleton, while a well-made celt of argellite lay near the left foot. The vessel is shown as Fig. 30.

Burial Number 2—This was the skeleton of an infant, and lay toward the southeastern circumference of the mound. The skeleton was extended with head toward the north. A fine pottery vessel, of three quarts



FIG. 30. Pottery vessel, found with Burial Number 1, Hine Mound (1-3).

capacity (Fig. 31) and decorated with a pleasing design, lay at the left side of the head. A shell spoon (Fig. 32) was inside the vessel.

Burial Number 3 lay southeast from the center of the mound. The skeleton, an adult, was extended, with head toward the north. It was unaccompanied by artifacts.

Burial Number 4, (Fig. 33), lay a short distance south of center, was extended upon the back with head

to the north, and was placed one foot above the floor line. At the head and similarly at the feet, were placed two large slabs of fossil-bearing limestone. A single pearl bead was found at the skull.



FIG. 31. Vessel found with Burial Number 2 of the Hine Mound (1-3).

Burial Number 5 was that of a child which occupied a shallow grave near the top center of the mound. It had been disturbed by the plow, and the accompanying pottery vessel was badly broken.

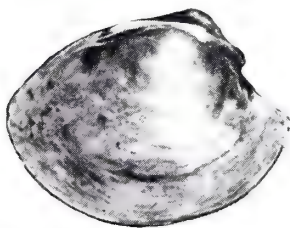


FIG. 32. Shell Spoon from the above Pottery Vessel (1-3).

The only additional feature of the Hine mound was the occurrence at approximately the center of its base or floor-line of upwards of 100 limestone slabs, ranging from small and medium-sized to very large and heavy specimens. These covered a space of 10 by 12 feet and were laid without apparent order, some of them flat upon the surface and others on edge. These stone slabs, toward the south side of their extent, were in places placed one

above the other. Intermingled with the slabs were small quantities of ash and charred matter, apparently the result of burning of twigs and small branches. It was felt that an important burial would be found beneath this pretentious structure, but careful examination of the underlying ground to a depth of several feet produced no results.



FIG. 33. Burial Number 4, Hine Mound, showing stones at head and feet.

COMPARISONS AND CONCLUSIONS

Examination of the Campbell Island site and of the nearby Hine site, though neither of them are extensive, add definitely to the accumulating evidence concerning the great Fort Ancient culture group in Ohio. While less than a quarter of a century ago but a single site of the group had been examined, there are now available published results of complete examinations of at least

a half-dozen important sites; and whereas formerly speculation busied itself in attempting to attribute the sites to one or another of the known historic tribes or nations, the evidence now is clear that, along with others yet to be explored, they represent the habitation sites of an important, populous and widespread group of our prehistoric population.

Perhaps the most gratifying result of the examination of the sites covered by this report is the establishment of the fact that they may be regarded as outposts (or prototypes, as the case may be) of the great settlement at Madisonville. This conclusion is based upon the finding that not only are they attributable to the general culture group of which Madisonville may be accepted as the type, but that in the matter of localized or modified traits, as exhibited in burial customs and artifacts, they are altogether similar.

It is a logical supposition that whatever may be learned through archaeological research regarding migration and chronology of this great group, must be mainly through the media of these variations or subtraits of a common culture complex; for should succeeding sites show no deviation from nor addition to the evidence already adduced, progress would be slow indeed. Without presuming to draw conclusions as to relative time of occupancy or migratory movements, it may be of interest, at this time, to indicate the points of similarity of the sites covered in this report and the Madisonville site, on the one hand; and the apparent close relationship between certain others of the general group, on the other.

The characteristic indicia of the Fort Ancient culture group are, of course, well known. They alone

of the several distinct groups of the territory have left well-marked village sites. These sites, often quite extensive, usually contain both burial mounds and cemeteries, as well as quantities of debris and refuse, disposed either in abandoned storage pits or in midden deposits; pottery-ware, stone, bone and shell implements and ornaments of distinctive types. It is in the presence or absence of any one or more of these indicia, or in variation shown in burial custom, type of artifact or common trait, that there may be found similarities or differences bearing upon the inhabitants of the several sites.

The examined sites and the order in which they appear to be closely related, are: Madisonville and Campbell Island (including the Hine) sites; the Feurt site and the Fox farm (Kentucky) site; the Baum site and the Gartner site.

The Madisonville¹ and Campbell Island Sites. Naturally in a site so important and extensive as that at Madisonville, a comparatively long period of occupation would be expected. This surmise was fully verified in its exploration by the finding of changes in burial customs as between the earlier and the later portions of the site. Furthermore, it was shown that occupation had extended to a date sufficiently recent to permit its inhabitants to come into contact with European traders. The earlier part of the cemetery is characterized by flexed burials, frequently accompanied by pottery vessels; the later portions, mainly by extended burials, with very little pottery-ware; and the village, as a whole, by a striking development and use of the storage-refuse pits and, in the minor artifacts, by the manufacture and use of a peculiar mattock-like imple-

ment made from antlers of the elk. Negatively, there was an almost total absence of the discoidal stone, so common in certain sites of the group.

In the Campbell Island (and Hine) site, burial was made almost exclusively in the extended position, corresponding to the later burials of the Madisonville site; but they were quite freely supplied with pottery-vessels, in which respect they resembled the older portions of the larger site. In the matter of minor objects, the smaller sites produced the antler mattock, and practically every form of the larger, while the discoidal stone similarly was lacking. The storage pits were very abundant and in every way similar, both as to construction and use, to those of the Madisonville site.

The Feurt² and Fox Farm³ Sites. Rather striking similarities are to be noted for these sites, particularly in the matter of traits peculiar to them alone, in so far as observed. Burials were almost exclusively of the flexed type, and the placing of pottery vessels with the dead was practically absent. Construction and use of the storage-refuse pit was entirely negligible, disposal of accumulated refuse being effected by carrying in of earth and covering it where it lay. Discoidal stones were surprisingly abundant, and a particularly high development of the triangular serrated projectile point of flint had been attained.

The Baum⁴ and Gartner⁵ Sites. At these two sites, the storage-refuse pit was everywhere in evidence. Burials were mainly extended, and the percentage accompanied by pottery vessels very small. Use of the discoidal stone was restricted, but the long scraper or beamer was particularly highly developed.

Geographical location doubtless had much to do with

the apparent similarity of these three pairs of sites. Campbell Island is but 20 miles removed from Madisonville, while less than 30 miles to the northeast from the latter is Fort Ancient, forming the third angle of the triangle embracing these several Miami river sites. While the Fox site, located 14 miles southwest of Maysville, Kentucky, is upwards of 50 miles from the Feurt site (on the Scioto, just above its juncture with the Ohio) this distance is considerably less than that from the Fox site to Madisonville. The Gartner site, on the Scioto river, north of Chillicothe, is less than 20 miles removed from the Baum site, in the Paint creek valley of Ross county.

There remain a number of unexplored sites of this culture in the state, while many others, presumably of the same group, are to be found along the river in adjacent territory. The examination of these sites outside of Ohio is greatly to be desired, in order that the evidence which they contain may be added to that already available regarding the migrations and chronology of the great Fort Ancient group of our prehistoric population.

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Certain Mounds and Village Sites in Ohio

VOL. 4 PART 2

Exploration of the Wright Group of Prehistoric Earthworks

EXAMINED BY

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Columbus, Ohio
The F. J. Heer Printing Co.
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EXPLORATION OF THE WRIGHT GROUP OF PRE-HISTORIC EARTHWORKS

BY H. C. SHETRONE, CURATOR OF ARCHAEOLOGY

The Wright Group of Earth-works is located in Perry Township, Franklin County, Ohio, one mile northeast of the village of Dublin. The three units com-



LEATHERLIPS' MONUMENT.

— lie mostly upon the land of Samuel M. Wright, whose name, in recognition of examination privileges and personal assistance accorded by him, is hereby given them.

The location of the Wright Group is ideally picturesque, occupying, as it does, the elevated terrace

overlooking the Scioto River to the west. Adjoining the group on the east and south is Wright's Run, an attractive stream which, coming down from the northeast, cuts its way through the limestone strata of the district and, tumbling over a picturesque water-fall, passes through a deep gorge and thence into the Scioto River. One mile to the north is the monument to the Wyandot chief Leatherlips.

The first important notice in archaeological literature of the Wright Group of Earth-works is contained in the Twelfth Annual Report of the Bureau of American Ethnology (1890-1891) where, in a paper entitled "Mound Explorations of the Bureau of Ethnology," Doctor Cyrus Thomas furnishes a map of the group,

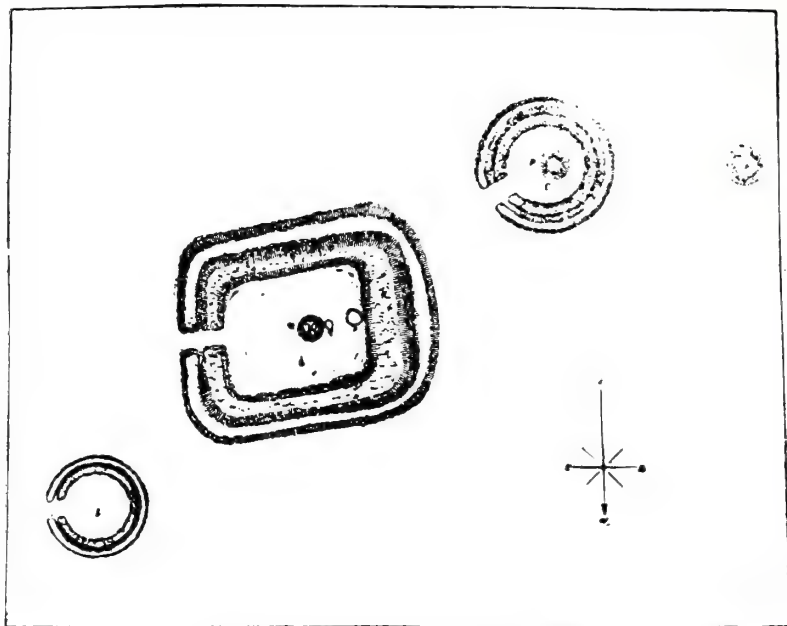


FIG. 2.—The Wright Group.

(Fig. 2) together with the following descriptive text:

ANCIENT WORKS NEAR DUBLIN

"The works represented (map) are one mile northeast of Dublin and one-fourth of a mile east of the Scioto River. They are on a nearly level area of the higher lands of the section. Contrary to what is usual, the soil immediately around them is not nearly so fertile as that a short distance away.

"At 1 is a circular embankment with an inside ditch. The diameter, measuring from the middle line of the embankment on one side, to the middle on the other side, is 120 feet, the wall is

about 10 feet broad and 2 feet high, and the ditch 15 feet wide and 2 feet deep, leaving a level enclosed circular area 80 feet in diameter. On the east side is a gateway 12 feet wide.

"No 2 is a rectangular enclosure with rounded corners. In measuring it, stakes were set where the middle line of the embankment would cross if produced. The distances between these stakes were as follows: north side, 287 feet; west side, 212 feet; south side, 262 feet; east side, 220 feet. The outer line of the west wall forms a curve along its entire length; the other sides are straight. On the north, east and west sides, the wall is 25 feet across the base; on the south side, 35; its height, quite uniform throughout, is about 3 feet. It is bordered on the inside by a ditch, 16 feet wide on the south side, 20 on the east and north sides, and 30 on the west side; depth about 2 feet on the east side, gradually increasing along the north from 3 to 4 feet, being widest and deepest at the south-west corner. Thus more earth was taken out along the west line of the ditch and added to the south side of the embankment. The rounded outer corners of the embankment are 20 feet within the points where the margins of the wall would intersect if carried on straight. The corners of the inner sides of the ditch are about ten feet within their corresponding points. The passage-way on the eastern side is 15 feet wide. In all these enclosures the passageway is simply the natural surface of the ground between the ends of the ditch and wall; that is to say, it is not graded. On the level space enclosed by the ditch 100 feet from the top of the east line of the embankment, is a mound (a) 4 feet high and 35 feet in diameter. On the top are numerous flat stones, which it is said had formed graves enclosing skeletons of very large size, but nothing could be learned as to the manner in which they were buried. Another stone grave (b), 8 feet in diameter, on the edge or bottom of this mound on its western side, had been opened, and so torn up that its mode of construction could not be determined. Still west, its edge extending quite up to the ditch, is another mound (2) 1 foot high and 24 feet in diameter. This had never been disturbed. From the top of the bank at the north-east corner of 2 to the nearest point on top of the embankment of enclosure 1, is 133 feet; and the line of the north edge of 2, if produced, would touch the south edge of 1.

"South-west of 2 is another circular enclosure (3) similar in construction to 1; the embankment is 18 feet across and 2 feet high; the ditch 22 feet wide and 3 feet deep in the deepest part; the level space enclosed 100 feet in diameter, making the entire diameter of enclosure from center to center of the outer wall 162 feet. The passage-way (opening directly toward 2) is 22 feet wide. In the enclosure is a mound (d) 40 feet in diameter and 3

feet high, its center being 60 feet from the inner edge of the ditch on the east. The amount of earth in this mound is hardly sufficient to account for the difference between the cubic contents of the excavation and those of the embankment.

"About 500 feet west of 3 is a single mound (4) 5 feet high and 50 feet in diameter".

The general character of the Wright group, together with the specimens unearthed by the plow in cultivation of the land, indicated that these works were to be attributed to the Hopewell culture group of Ohio prehistoric peoples; and in view of the fact that the group is the most northerly located work of the Hopewell culture identified up to the present time, it was felt that its examination was desirable. Prospects for favorable results were not encouraging, owing to the very slight elevation of the mounds and the fact that they had been cultivated and disturbed; but the labor involved in examining them was comparatively small, and positive identification of the culture status of the builders, at least, would be sufficient recompense for the efforts expended.

Since the Bureau of Ethnology survey of the Wright group was made, the units composing it have been considerably modified by cultivation, although they remain, even at this late date, comparatively bold. This is particularly true of the easternmost of the three enclosures (1), a circular figure, which is particularly bold, the moat of which at the time of examination contained throughout its entire circumference from one foot to 18 inches of water. By using a vantage-point furnished by a nearby tree, a photograph compassing the entire enclosure, with its water-filled moat, was secured. (Fig.

3). This enclosure contained no mound, and an examination of its interior disclosed no burials or other remains.

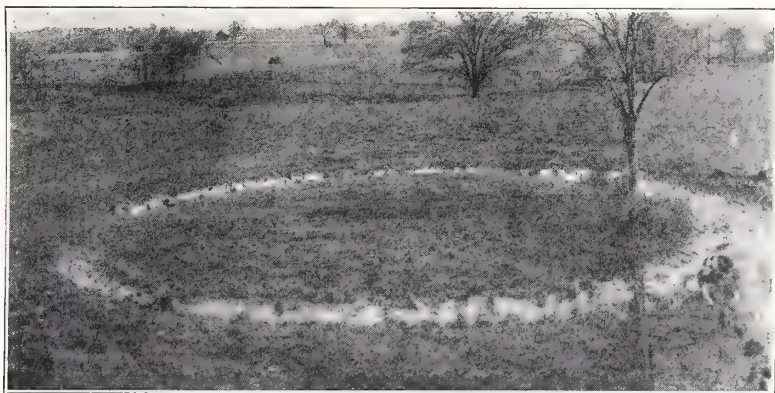


FIG. 3.—Circular Enclosure Wright Works.

The mound within the central figure—the square enclosure represented as No. 2—was found to have been considerably modified in size and shape through the removal of stone from its top and sides, and through continued encroachment of cultivation around its margin, in which process the stones extending outward from the circumference had been dislodged and removed or thrown upon the mound. Its approximate dimensions, as a result, were 28 feet east and west and 20 feet north and south, with a maximum height, toward the east end, of 34 inches.

The mound, examination of which is shown in Fig. 4, was entirely removed—a difficult task, in view of the great quantity of flat limestone slabs composing the structure and the growth of shrubbery and small trees which practically covered it, their roots penetrating in every direction and binding the whole closely together.

The examination revealed these results: Upon a fairly level but not greatly used floor or base, there had been erected a structure composed of clean clayey loam, 15 inches in depth at the center. Upon the floor or base, a thin covering of charred matter appeared, but no post-molds indicating a pre-structure of timbers, and no burials or other remains, were found. However, placed directly upon the top of the low earthen mound there had been deposited a total of 11 burials, of a very un-



FIG. 4. — The Stone Mound, Wright Works.

usual nature. Instead of the usual cremated burials of the culture, or the alternate ordinary uncremated burials, the bones of the skeletons had been broken into fragments, and the little heaps resulting, in every way resembling the cremated burial, but unburned, were deposited simply and without accompanying artifacts, upon the surface of the soil. Covering these burials, which were placed at random throughout the structure, were slabs of limestone, often measuring three feet in

length. This covering of limestone slabs was not confined to the burials, but formed an arch, several layers deep, over the entire mound. Upon and above this stone covering, which in a way suggested the ceremonial sand or gravel strata characteristic of the more central mounds of the culture, had been heaped earth from the surrounding surface, the amount or depth of which was indeterminate, owing to the disturbance which the mound had suffered.

It was found that at some early date, beyond the recollection of the owner or old residents of the districts, a shaft had been sunk at the center of the mound. This covered, at the base, a space roughly 4 feet in diameter, and had reached well below the base line. It served a useful purpose, in that it enabled the present survey to determine, without doubt, that the remainder of the structure had not been disturbed to any appreciable depth.

With the idea in mind that burials might possibly be found outside the mound, within the level space of the enclosure, numerous tests were made by trenching. A single burial, unique perhaps in character, was found at a distance of 30 feet south-west of the base of the mound.

This burial, shown by the accompanying photograph, (Fig. 5) lay one foot below the present surface, and consisted of a basin-like receptacle formed by laying down slabs of limestone within the shallow excavation, the placing of the human remains therein, and the covering over of these with other thin slabs of limestone. The burial was a cremated one, typical in every respect in the amount and character of the remains. It was unaccompanied by artifacts.

Unit No. 3, being the circular enclosure to the westward, contained a burial mound which, according to the above-mentioned survey was, at the time, 3 feet high. Since that survey was made, the land on which the enclosure and mound lie has been plowed and cultivated. In breaking this land, for the first time, in 1914, Mr. Wright, the owner, came upon four graves. He was able to point out the location of these, and to describe them and their contents. Their location was verified in the examination of the structure.



FIG. 5. — Cremated Burial, Wright Works.

The entire site of this mound was carefully excavated, the result showing that the Bureau of Ethnology survey had erred in the height of the mound, rather that they did not foresee that the greater part of the apparent elevation was a natural one; in fact, the arti-

ficial elevation, or mound proper, did not exceed 12 inches at its highest point. Since this work has been cultivated but little since the time of the Bureau survey, it has been but slightly modified in form. As a result, the cultivation of the site had disturbed all graves, only the bottoms of which remained for the present survey, and to enable the exact identification of the disturbed burials.

Of the four burials contained in this mound, two were cremated, and two buried in a natural way, uncremated. Near the center of the mound, within a stone grave, had been placed a cremated burial, from which Mr. Wright took a large ocean shell container and half a dozen finely made flint flake knives. Our examination disclosed the disturbed grave, and two additional flake knives. A second cremated burial lay about 4 feet to the south-east of the center, was covered by stone slabs, but contained no artifacts. Just south of center was found an uncremated burial, the skeleton well preserved, with which, placed near the head, was a pair of spool-shaped copper ear-ornaments. The skull of this burial was sent to the museum at the time of finding by Mr. John Wing of Dublin.

The fourth burial, uncremated, lay to the north-west of center. With this was found a plain platform pipe, of the usual pattern, and a slate gorget. In addition to these burials, the present survey noted the remains of a fifth, just north of center. This was uncremated, with the covering of stone slabs, below, at least, and showed merely the vestiges of a flexed skeleton, mostly dislodged by the plow. A few fragments of mica, the incisor tooth of a beaver, and a few flake

flint knives were scattered through the disturbed earth of the mound.

The specimens taken from these graves by Mr. Wright are in the collection of Mr. F. P. Hills, of Delaware, Ohio, with the exception of the flaked knives, of variegated Flint Ridge material, which were presented to the Museum by Mr. Wright.

THE KRUMM MOUND

With the permission of Mr. C. S. Krumm, upon whose land it is located, the westernmost mound shown on the map of the group was examined. Owing to the fact that it lies at some distance from the earthworks proper, it had remained undetermined whether or not this mound actually pertained to the Wright group. The structure was slightly more than three feet in height, with an indeterminate lateral extent, owing to long-continued cultivation. It was found to be composed of the clay and loam of the surrounding surface, was without definite features as to its construction, and contained a total of six carelessly deposited partial skeletons, or reburials. The only burial of interest is that shown in the accompanying cuts, in which (Fig. 6) is shown the deposit before lifting the covering of stone slabs and (Fig. 7) the promiscuous lot of human skeletal remains beneath them. With these remains, comprising apparently parts of three or more skeletons, was a stemmed flint spear-point, three inches in length, made from variegated Flint Ridge material.

Although material evidences within the Krumm mound were rather scant, they are sufficient to demonstrate clearly that this mound was not constructed by the builders of the Wright group, but that it probably



FIG. 6. — Stone-covered Burial, The Krumm Mound.



FIG. 7. — Stone-covered Burial, Exposed — The Krumm Mound.

had its origin with the peoples whose burials are found so freely within the gravel deposits of this region of the Scioto Valley.

CONCLUSION

Examination of the Wright Group proves that these works belong to the Hopewell culture group; incidentally, they are perhaps the most northerly example of their kind so far identified. While definitely Hopewell in their characteristics, the evidence adduced by exploration points to an outlying colony or band which had ranged farther to the north of the principal areas of occupation. The nearest earthwork of the same culture is the Smith Group, one mile west of Worthington, on the west bank of the Olentangy River, some four miles to the south-east. This group, shown as Fig. 8,

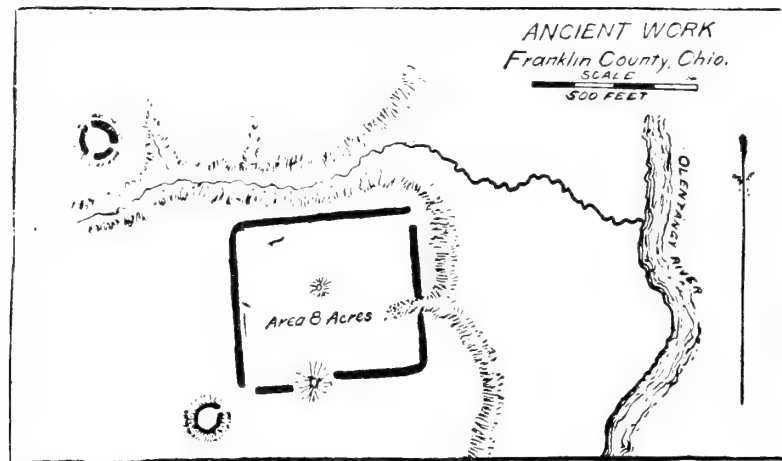


FIG 8. — The Smith Works

is quite pretentious, the larger of the two mounds being upwards of 30 feet in height. It is readily conceivable that the Wright works were constructed and occupied

by a band from the Smith Group, which in itself is doubtless an outpost of the larger settlements to the south, or of the great works at Newark, 40 miles to the eastward and only slightly to the southward. The intermediate form of burial as practiced in the stone mound of the Wright group, where the breaking into fragments of the skeletal remains seems to have been substituted for cremation; and the depositing of a cremated burial in a stone grave, outside the mound proper, are interesting details of the exploration of this group.

THE MCGUERER BURIAL SITE

On the farm of Mr. Chauncey McGuerer, one-half mile north of Dublin, on the east side of the Scioto River, and at about the same distance south from the Wright Group of Earthworks, there was opened, in 1921, a gravel pit from which large quantities of gravel for county road construction have been taken. The gravel deposit corresponds to the edge of the terrace overlooking the bottom lands of the Scioto which, at this point, are very narrow. It was not until the ensuing year, just preceding the examination of the Wright Group, that the Museum was apprised, through Dr. H. O. Whittaker, of Dublin, of the fact that steam shovels employed in removing gravel had unearthed many human skeletons. At this time, however, the industry was at the point of being discontinued, and only a limited portion of the burial site remained for examination.

Assisted by Dr. Whittaker and a workman, the writer spent three days in a cursory examination of those portions of the site available, with the results here recorded.

At the east side of the cut, where the steam shovel had discontinued operations, there appeared to view a discoloration of the gravel, which, upon examination, proved to be the margin of a burial pit. This pit, upon being cleared out, was found to be approximately seven feet across at the top, and to extend to a depth of six feet. The width at the bottom of the pit was approximately four feet, although the caving in of the gravel made it difficult to determine the exact size and shape of the excavation. Within this pit there had been dumped a surprising number of human bones, some of which had been tied in bundles, while others apparently were thrown in one by one. The long bones of the arms and legs predominated in numbers, while many vertebrae and other small bones seemed to be absent. From the total deposit, Doctor Whittaker identified 31 distinct individuals, all adults. Over the mass of bones, before filling in the pit with earth, there had been

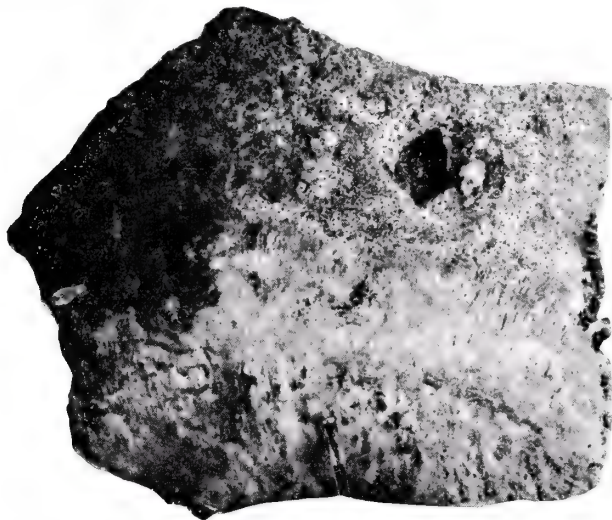


FIG. 9. — Human Parietal. With Arrow Wound — McGuerer Burial Site.

dumped a large quantity of red ochre, the result being that most of the bones were more or less coated with the pigment. The only artificial objects found with the deposit was a pair of cut perforated jaws of the wild-cat.



FIG. 10. — Interior Aspect of Fig. 9.

An interesting feature of the remarkable deposit of human skeletal remains was the finding of two bones bearing the marks of wounds from flint arrow-points. One of these is the right parietal bone of the human

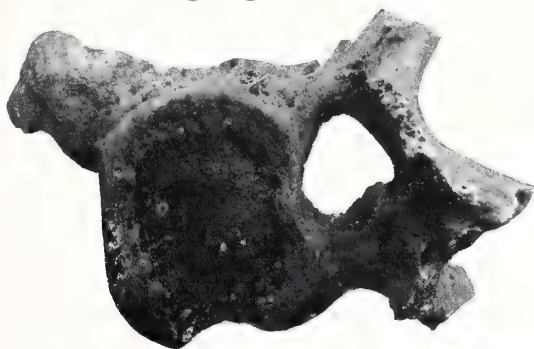


FIG. 11. — Human Vertebra, Pierced by Flint Arrow-point.

skull, pierced by a pointed weapon, presumably a flint arrow-point. In Fig. 9 is shown the outer aspect of the bone with the diamond-shaped perforation, while Fig. 10 shows the inner side, with the wall of the skull forced inward and into the brain to a depth more than equal to the thickness of the skull. That the wound was not immediately fatal is apparent from the fact that the perforation shows new bone tissue thrown out in the process of mending or healing. The second specimen, shown as Fig. 11, is a human dorsal vertebra, into the body of which there is embedded a flint arrow-point. The arrow-point is of pink flint, notched type, measures five-eighths of an inch in width and apparently is between one and one-fourth and one and one-half inches in length. Over the vertebrae and its embedded arrow-point and almost completely covering them, is the coating of red ochre thrown into the pit after the bones were deposited. Unlike the arrow wound in the parietal bone, there is no evidence of healing in this specimen, and from the fact that the projectile point must have passed through the chest from a direction several degrees to the left of center, thus piercing the vital organs before burying its point in the anterior or body portion of the vertebra, it is evident that death must have been practically instantaneous.

A second pit, the margin of which appeared in the edge of the cut, as in the above deposit, was found to be seven feet in depth. It contained, at the bottom, two adult skulls. A short distance eastward from the margin of the cut there was uncovered the skeleton of a youth, buried about 15 inches beneath the surface. The badly decayed skeleton was accompanied by a set (upper

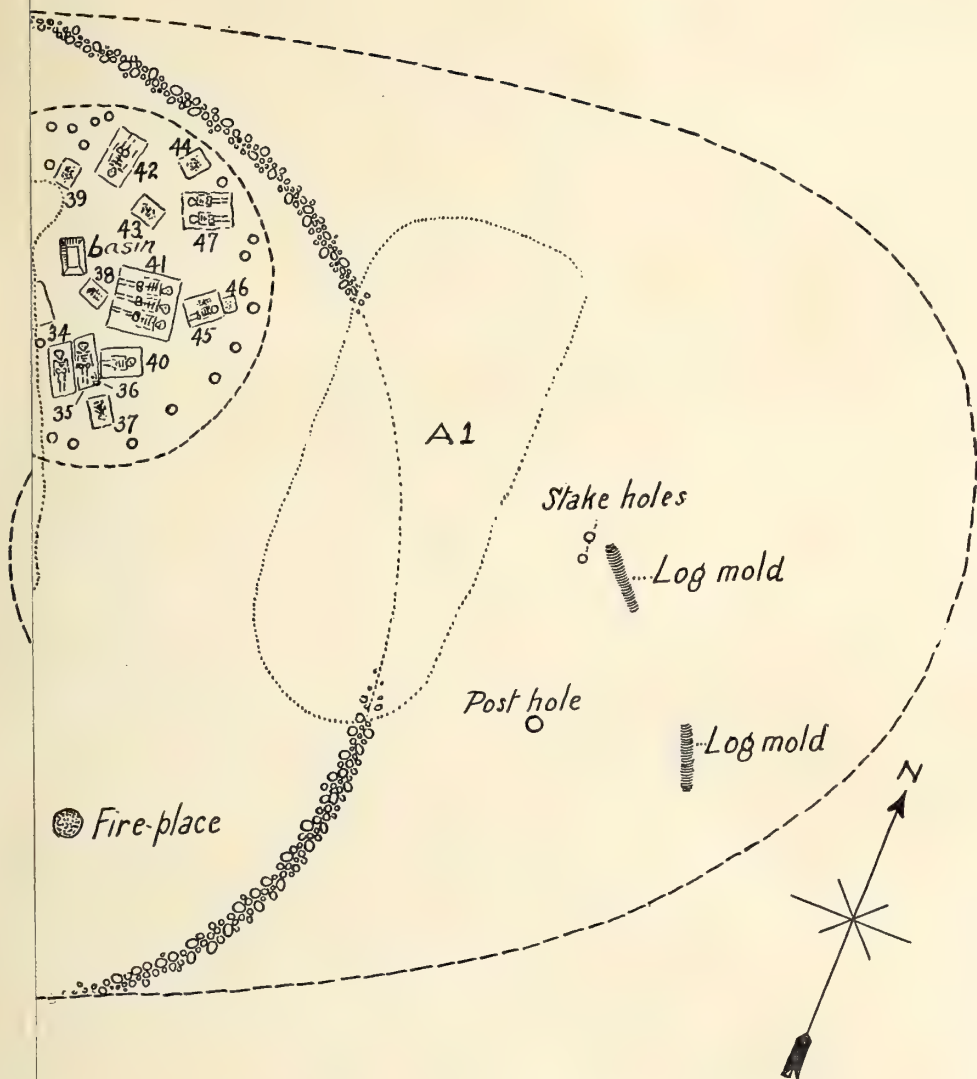
and lower) of cut and polished jaws of the wolf. The work of examination was carried on by taking advantage of the vertical wall, some ten feet high, resulting from steam shovel operations. This wall was repeatedly caved off, thus disclosing the pits and burials. A third pit, brought to light in this manner, contained a deposit of bundled bones, principally the long bones of the arms and legs, with which were placed a string of large and small shell disk beads.

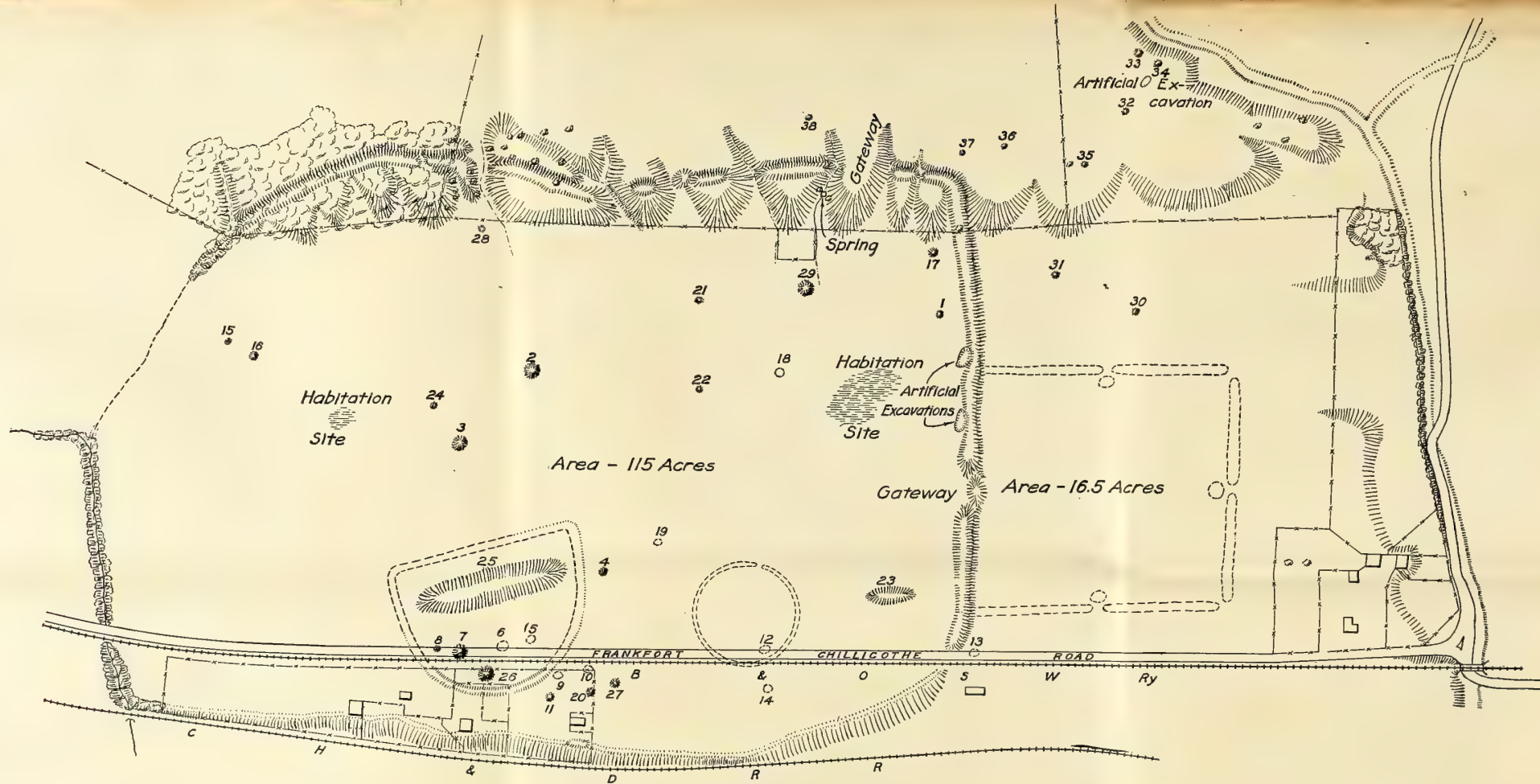
The only skeleton found buried intact was that of a very old individual, the jaws almost toothless and the tibia very much bowed. The burial, placed at a depth of three feet, lay on the right side, falling forward onto the face and stomach, and had the legs tightly flexed to the body. A rude implement, of the roller-pebble type, lay at the head of the grave.

Several other pits, from three feet to six feet deep were worked out, and found to contain neither burials nor implements. The purpose of these pits, which appear to have been very numerous within the area from which the gravel was removed, is not clear. The greater number of them contained merely hard dark earth, with occasional fragments of pottery, bone and flint, filling the funnel-like pits dug into the clear gravel deposit.

Since the portion of this rather extensive burial site available for examination was so limited, no very broad nor definite conclusions can be drawn therefrom. It can be said, however, that the occupants of the site were the same peoples whose villages and camp sites are found rather freely along the central course of the Scioto and whose burials are to be found in many of the

gravel terraces bordering the valley. From the rather scant evidence, it appears that the small mound half a mile to the north, on the Krumm land, may be attributed to the same tribes.





ARCHAEOLOGICAL SURVEY OF
THE HOPEWELL GROUP
OF PREHISTORIC EARTHWORKS

ROSS COUNTY, OHIO

FIELD EXPLORATIONS

BY

H. C. SHE TRONE

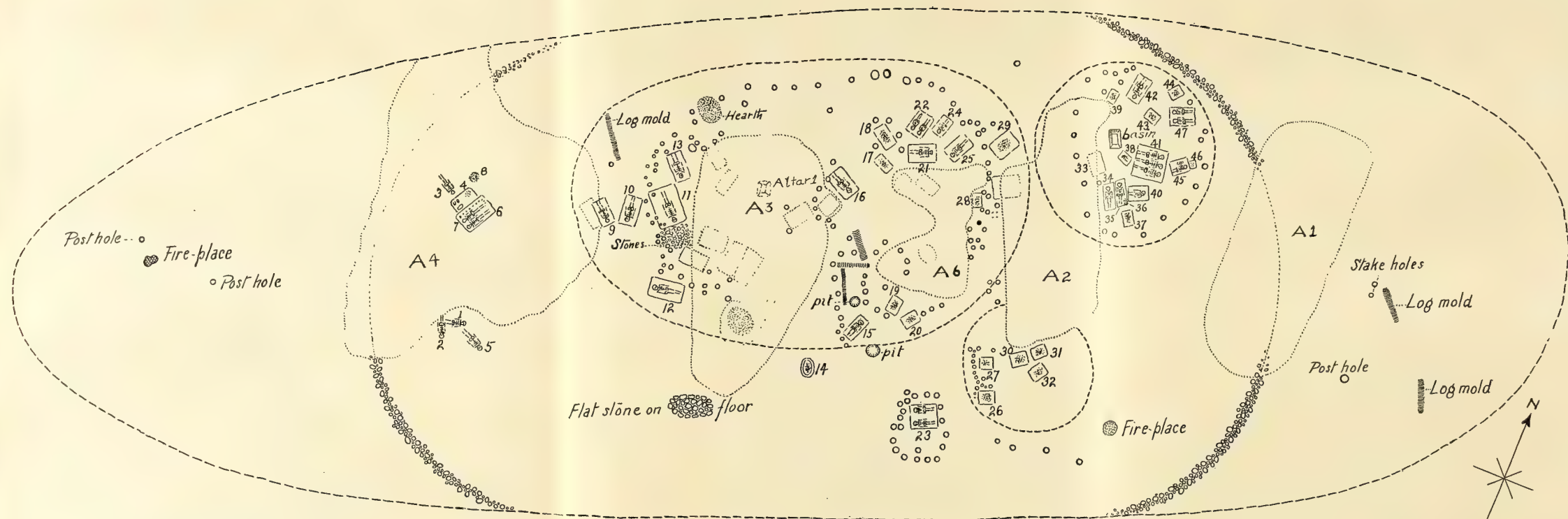
1922-1925

F. R. JONES - SURVEYOR

LEGEND

- existing works
- obliterated works

0 250 500 750 1000 feet



A Area previously excavated.

Mound No. 25 Hopewell Group
— 20 ft —

as used
in the jewelry, fine art, & dental trades.
Modern creative gold & platinum jewelry
designs from Paris
Anything by: Boucheron, Beclernichoff,
Sasportas, Fouquet, Lemieux, Boudet,
L'Hommedieu, Latique, etc. (Museum
editions of Paris Origin. Must be con-
temporary)

M. A. Zellner, Books

R.F.D. No. 1, Wind Gap, Pa.

Any on Antique Dolls
Any on Gen. Van Dorn (Civil War)
Anything on Hickory County, Missouri
Brown, C. W. Salt Dishes, 1937
Chaddock. Safety Fund Banking System
Chamberlaine. Memoirs of the Civil War
Davis. Rise & Fall of Confederate Gov.
Early, Jubal. Autobiographical Sketch
Genealogy, Bowman, Cushman, Dreisbach,
Eastburn, Knowlton, Maltby, Meade, St.
Clair, Sampson, Siegfried, Webster,
Whitney, Wilkinson

Certain Mounds and Village Sites in Ohio

VOL. 4 PART 3

Exploration of the Ginther Mound

The Miesse Mound

EXAMINED BY

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EXPLORATION OF THE GINTHER MOUND

H. C. SHETRONE, CURATOR OF ARCHAEOLOGY.

The type of prehistoric tumuli known variously as Temple mounds, Platform mounds, Truncated mounds and Flat-topped mounds has furnished substance for much speculation in the archaeological literature of Ohio. The early attitude of writers on the subject may be summarized in the words of Squier and Davis, whose opinion is expressed as follows:

“So far as ascertained, they cover no remains, and seem obviously designed as the sites of temples or of other structures which have passed away, or as ‘high places’ for the performance of certain ceremonies.”

Fowke, however, writing at a much later date, is not content with this convenient disposition of the matter, and states that

“As none of them have been explored except in a very inadequate and perfunctory manner, the assertion that ‘they cover no remains’ is not warranted by our present knowledge.”

Only a few examples of the type of mound under consideration occur in Ohio, the most notable being those in connection with the great enclosures at Marietta, with minor ones at Newark and Portsmouth; a low but extensive one within the Cedar Bank works, north of Chillicothe; and, in close proximity to the last-named, the rather striking Ginther Mound—the subject of this report.

The accompanying map of the Cedar Bank works and vicinity, (Fig.1) after Squier and Davis, shows

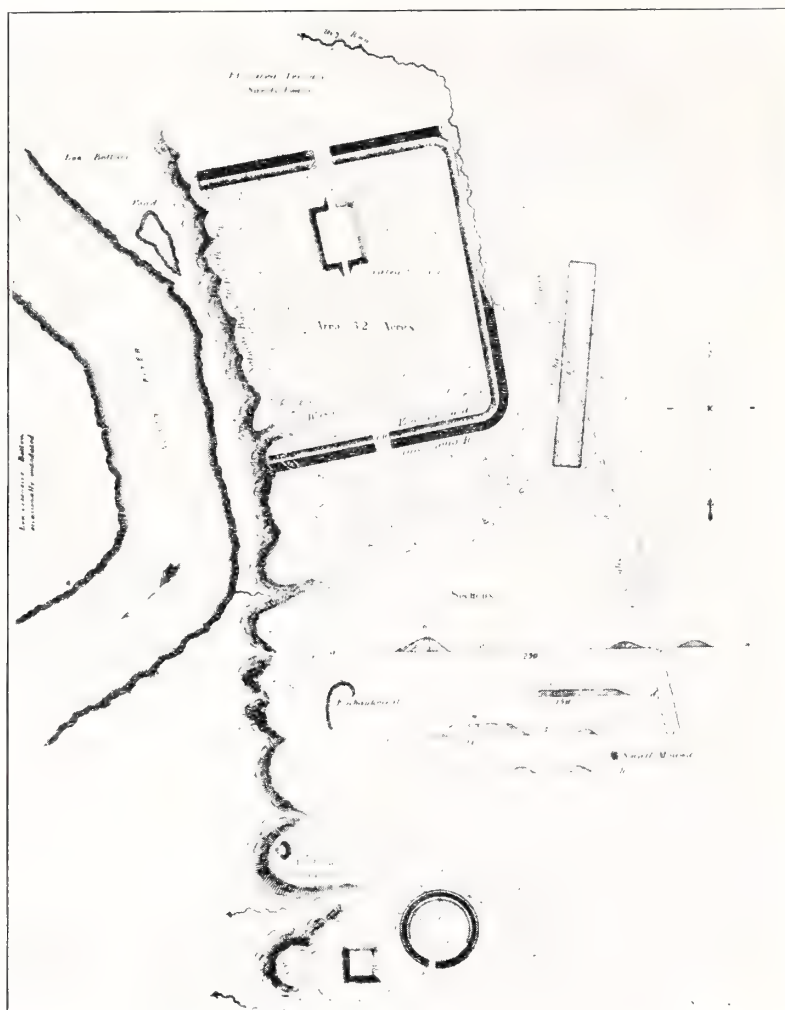


FIG. 1. — Map of Cedar Bank Works and adjacent Mounds.

the location of the Ginther mound and circular enclosure, while their smaller drawing (Fig. 2) depicts

the Ginther works in more detail. Their description of the same is as follows:

"About one-third of a mile south of the principal work (Cedar Bank) is a truncated pyramid, and a small circle; the former is 120 feet square at the base, and nine feet in height; the latter is 250 feet in diameter, and has an entrance from the south, 30 feet wide. The sides of the pyramidal structure correspond to the

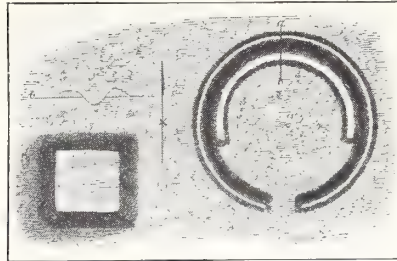


FIG. 2. — Plan of Ginther Mound and Enclosure.

cardinal points. The circle has a ditch interior to the embankment; and has also a broad embankment of about the same height with the outer wall, interior to the ditch, upon the side opposite the entrance * * * The 'elevated square' has been excavated, but was found to contain no remains."

Since the Ginther works, as is true of most of Ohio's prehistoric tumuli, have suffered modifications in form and size through cultivation, the drawings and measurements of the early explorers are here set down. While the mound itself was found to equal the dimensions given therein, the circle has almost disappeared beneath the plow, and at the present time is just barely traceable.

Although Squier and Davis state explicitly that the Ginther mound had been excavated and found to contain nothing, the Museum authorities felt that, in view of the fact that it is practically the only mound of its type remaining available for examination, and since there is a recognized growing demand for information

regarding their use and purpose, it should be explored. This sentiment was strengthened by the significant location of the tumulus, which lies midway between, and in close proximity to, the Cedar Bank works on the north and the Hopeton works to the south, while just across the Scioto river to the west is the important Mound City group. Since the Cedar Bank and the Hopeton works are practically devoid of mounds, it was felt that the Ginther mound might prove to bear a very close relationship to either or both of them.

With the kind permission of Mrs. Mary Ginther,



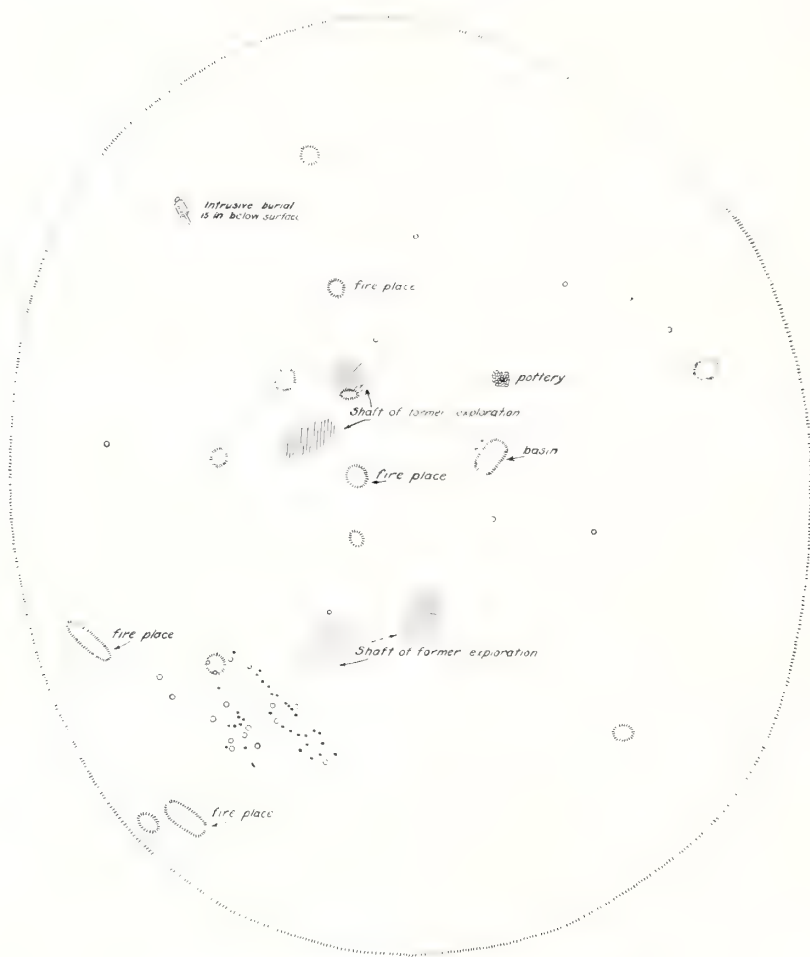
FIG. 3. — The Ginther Mound.

owner of the land upon which the works are located, and with the cooperation and assistance of Mr. M. D. Vaughan, manager of the estate, examination of the Ginther mound (Fig. 3) was begun on July 8 and completed on August 15, 1922. The final calculations of Mr. John H. Jefferson, surveyor for the project, showed the structure to be ten feet in maximum height, while the flattened portion, with a diameter of 70 feet, averaged slightly less than nine feet high. The floor ex-

tent was approximately 100 feet east and west and 125 feet north and south. There was no evidence to indicate that the mound ever had been geometrically rectangular in form, as shown in Squier and Davis' drawing, although this feature, particularly the outward angular aspect of the tumulus, may have been obliterated by cultivation and erosion.

The accompanying map of the floor, (Fig. 4) made by Mr. Jefferson for our survey, tells the story of the Ginther mound. The explanation should be noted, however, that with a single exception the ash-beds, fire-places and other indicia shown on this plan in reality do not pertain to the mound proper, but were found beneath the floor where they had been made and used previous to the erection of the mound. In a word, despite the fact that the Ginther mound was shown to be of the Hopewell culture and that it contained a typical and highly specialized floor, there had not been placed within it a single burial or deposit, nor did it contain a single basin of the so-called crematory type—an almost inseparable adjunct of the Hopewell mounds.

The exception to this perhaps unprecedented barrenness of the floor of such mounds was a singular depression lying just east of center. This was rectangular in form, measuring three feet by five feet, and extended almost east and west. The floor around this basin or depression was heavily covered with coarse sand and fine gravel, of a reddish-yellow color. The pit itself which, when cleared out, was found to be 16 inches in depth, contained, first, a stratum of the same sand as that covering the floor, three inches thick; beneath this, a layer of dark organic matter, interspersed with numerous animal and bird bones, broken pottery-ware, bits

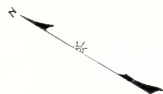


LEGEND
 ○ post hole
 ▭ ash bed

NORTH AND SOUTH CROSS SECTION THROUGH CENTER OF MOUND
 AS DRAWN TO SCALE, NOT TO 1:500 PLAN

ARCHAEOLOGICAL SURVEY
 GINTHER MOUND
 FIELD EXPLORATIONS
 BY
 H.C. SHETRONE
 JULY - AUGUST - 1906
 J.H. JEFFERSON - SURVEYOR.

Scale in Feet
 0 5 10 20 30



of mica, flint chips and mussel shells; below this was a layer, four inches thick, of clayey loam, intermixed with which were a few animal bones; while at the bottom a stratum four inches in thickness was composed of carbonaceous material, containing the same sort of debris as the above strata. Near this pit were two small post-holes.

What may be considered a second deviation from the uniform dearth of deposits or structures on the floor of this mound was the occurrence, northeast of the basin, of a post-hole, around which had been laid, covering a rectangular space 11 by 16 inches in extent, carefully fitted fragments of pottery-ware. These, pavement-like in their disposition, were shreds from utility ware, cord-marked, ranging in size from small fragments to pieces three or four inches across.

The very striking and finely constructed floor of this mound extended uniformly to the very edge of the super-incumbent earthen structure, and comprised approximately 10,000 square feet of surface. The covering of sand often reached a depth of more than one inch, particularly toward the south side. A gradual and apparently intentional slope from the north terminated in a gutter along the southern circumference, for drainage. A few post-molds occurred around the outer edge of the floor, but these were not in sufficient numbers to indicate any extensive attempt at roofing. Upon the floor, particularly toward the south and west, great numbers of chips and flakes from the translucent and variegated Flint Ridge chalcedony and the gray or drab nodular flint were scattered. Among these were occasional finished projectile points and flake knives.

Of the several ash-beds and fire-places found be-

neath the floor, the positions of which are indicated on the map, it only need be said that they were entirely similar to that found upon the floor described above, in so far as contents are concerned, and that in form they were similar but much less specialized and less carefully constructed.

The one development of particular interest in the sub-floor examination was the finding of what appears to have been a food offering, or at least a cache deposit of food. A pit, three feet across, had been dug to a depth of 18 inches below the floor line, and on the flat bottom of this had been deposited a half-bushel of hickory-nuts, of the common shell-bark variety. Around the edges of this deposit were placed, with apparent order, a number of mussel-shells, presumably to serve as spoons or ladles. On top of the deposit, at its center, was the remains of a burned clay vessel, of the utility type, containing a number of animal bones, among which were identified the vertebrae, shoulder-blade and split leg-bones of the deer. Around the pit containing the deposit had been set small posts and stakes, enclosure-like.

The earth comprising the mound was that gathered promiscuously from the adjacent surface and from ravines and washes. The individual loads or basketfuls often were clearly distinguishable by their colors. A single intrusive burial—that of a young adult—was found, badly decomposed, one foot below the surface on the northern slope of the mound.

Four old shafts, sunk to either side of center in a line north and south were disclosed by our survey. They were each about five feet across at the point of contact with the floor. Aside from Squier and Davis' state-

ment, as before noted, no record of such examination, nor by whom conducted, has been found.

The accompanying map of the Cedar Bank works shows a small mound occupying the point of land just to the north-west of the Ginther works. This is on land now owned by the Shilder brothers, of Chillicothe, who generously permitted its examination. The structure was found to be two feet high at the center, with an indeterminate diameter, as a result of cultivation and from the fact that no floor line existed. Occupying the central portion of the elevation there was found a mass of burned clay, reaching from the supposed base-line to within a few inches of the top, and covering a space nine feet in diameter. At the bottom center of this mass was found a partial human skeleton, the skull, femuri and a few small bones only being present. It was noted that the earth beneath the skeleton was disturbed, and excavation disclosed a circular pit, four and one-half feet in diameter, reaching to a depth of three feet beneath the base line. On the flat bottom of this pit was found a layer, six inches in depth, composed of intermixed carbonaceous matter and small plates and fragments of mica. A few of the mica plates were as much as six inches across, but none was cut into form. Three flake knives, of drab nodular flint, were found in the layer. No other part of the mound disclosed remains.

In the same field and adjoining the Shilder mound on the north-east, are a number of tipi-sites and fire-places. The presence of these is readily noted when the ground is freshly plowed, or in the greater luxuriance of the grain under cultivation. They are charac-

terized by an abundance of burned stone, flint-chips, broken pottery-ware and fragments of mica. In two of these, beneath the plow-lines, were found flake knives of the drab flint, exactly similar to those taken from the Schilder and the Ginther mounds. It is everywhere evident, from the remains of tipi-sites and other indications, that the entire face of the terrace, from the Cedar Bank group southward past the Ginther works to the Hopeton group, was the place of habitation of the peoples who constructed and utilized these several works.

That the Ginther mound, the Schilder mound and the accompanying tipi-sites pertain to the great Hopewell culture group of prehistoric peoples will be evident to the student of Ohio archaeology, if not, indeed, to the casual reader. Whether future explorations will continue to bear out Squier and Davis' seemingly unwarranted surmise that the flat-topped mounds contain no remains, remains to be seen. We can, even at this late date, speak authoritatively only of a single one — the Ginther mound. In this instance we know that no human remains were enclosed, and if one were inclined to speculation it would not be difficult to surmise that the impressive tumulus was erected to mark the spot where some event or occurrence of great moment and significance to its builders transpired — rather than as a monument to the dead.

THE MIESSE MOUND.

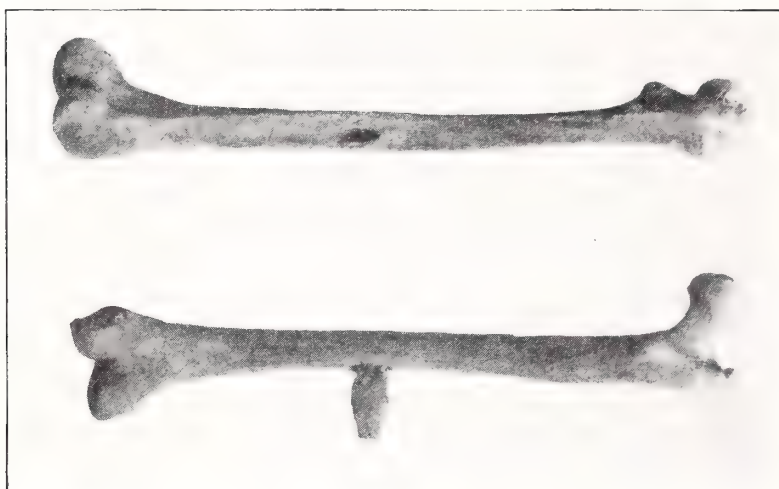
The Miesse Mound is located in Green township, Ross county, Ohio, on the land of Dr. Charles Miesse, of Chillicothe. It lies on the brow of the second terrace of the Scioto river valley, about one mile north-east

from the Ginther mound, and about one-third of a mile east of the Cedar Bank works. Upon completion of the examination of the Ginther mound, and at the request of Mr. Albert C. Spetnagel, who had secured exploration privileges, the force of laborers was employed for one day, August 10, 1922, in its examination.

The structure was found to be 25 feet in diameter and about two feet in height. It was composed of the yellow clay of the region and was entirely homogenous throughout. It was found to contain five distinct burials — four of them being simple uncremated skeletons, placed singly, while the fifth consisted of an uncremated skeleton accompanied by the cremated remains of two or more individuals.

One of the uncremated skeletons (number 1 in the accompanying floor plan) lay within the south-west quarter of the mound, on the original surface. It was that of an adult male, about five feet and seven inches in height, which lay extended on the back with head to the southeast. Several bones of the skeleton were missing, the burial apparently being a re-burial. It was unaccompanied by artifacts, but the right femur was penetrated by a chipped flint arrow-point, of black material, two inches in length. The projectile had pierced the heavy bone, to and through the interior canal, reaching to the opposite wall. The force with which the weapon struck the angular edge of the bone had resulted in shattering the extreme tip or point, and the fragments apparently had worked their way out of the wound, in the resulting suppuration. That the wound was not a fatal one is shown by the fact that the perforation had healed, considerable new bone tissue having been thrown out around the embedded point. That the

arrow-point itself had remained in place in the shaft of the femur is explained, doubtless, by the fact that it was embedded in the heavy muscles of the leg, and in the absence of efficient surgical skill, was suffered to remain within the wound. The cut (Fig. 1) illustrates



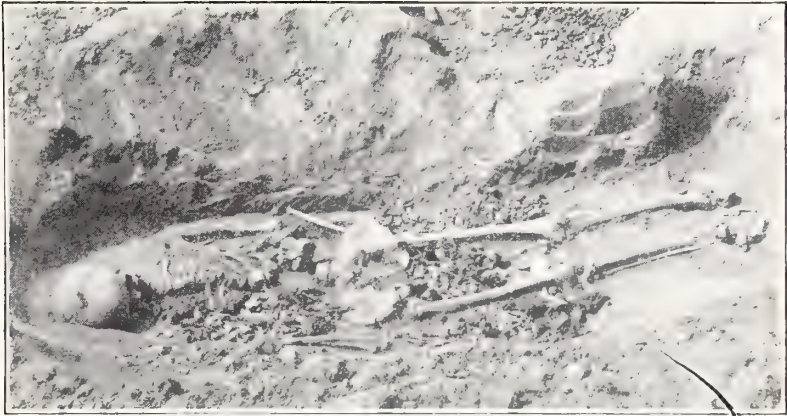
the femur bone with the arrow-point in place, as found; and the wound, with the arrow removed.

A second skeleton (number 2) almost complete but badly decomposed, lay in the south-east quarter of the mound. It was disposed similarly to the above and was without distinctive features.

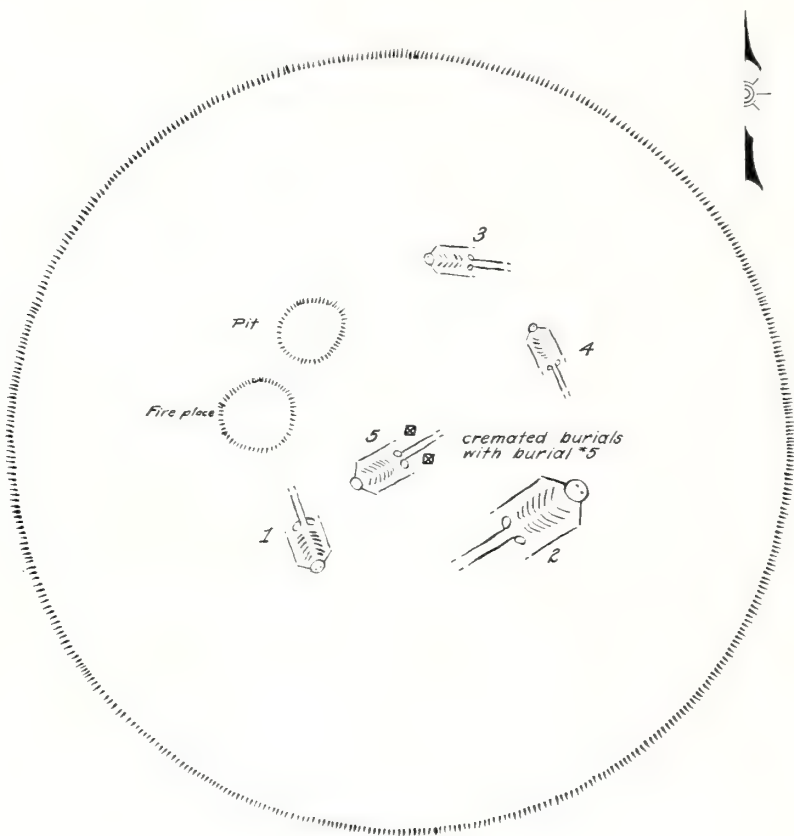
Two partial skeletons (numbers 3 and 4) lay within the north-east quarter of the mound. A rude refuse pit and a fire-place occupied the north-west section, as shown on the plan.

The feature of the Miesse mound was the central complex burial, shown as number 5. This occupied a grave, dug at about the center of the structure to a

depth of 15 inches below the original surface and measuring six feet in length and two feet and four inches in



width. In it had been placed an adult human skeleton, uncremated, with head to the south-west. On the chest



CROSS SECTION OF MOUND

ARCHAEOLOGICAL SURVEY MIESSE MOUND

FIELD EXPLORATIONS
BY

H. C. SHETRONE.

AUGUST 10-11, 1922

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Scale in Feet.
0 1' 2' 3' 4' 5' 10'

of the skeleton lay the base portion of a spear-point of translucent flint, while at the knees were a truncated cone of white limestone, a turtle-shell container, an arrow-point of black flint, the incisor of a beaver, and the tip of a deer antler. Beneath and around this skeleton, extending from the head to the knees, were disposed the cremated remains of two, and probably three individuals. The cut shown as Figure 2 shows the burial as uncovered, while Figure 3 illustrates the uncremated skeleton after removal of the cremated remains.

The finding of a burial in which an uncremated skeleton was accompanied by cremated remains, as in this example, is interesting and unusual, if not indeed unique. The arrow-pierced femur is one of the best illustrations yet found in the Ohio mounds of the penetrating power of the primitive flint implement.

Certain Mounds and Village Sites in Ohio

VOL. 4 PART 4

Exploration of the Hopewell Group

EXAMINED BY

H. C. SHETRONE

WILLIAM C. MILLS, M. Sc.

Columbus, Ohio
The F. J. Heer Printing Co.
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PREFATORY

The Ohio State Archæological and Historical Society's examination of the Hopewell Group of Prehistoric Earthworks, if set down in detail, would more than fill the allotted space; and yet, such a report, without some mention of two former partial explorations would lack much of being a complete story. Moreover, should anything like a full review of previous explorations be included, the resultant report would extend entirely out of bounds.

The solution, then, appears to lie in the direction of a somewhat curtailed account of the recent Survey, supplemented by sufficient reference to former ones to produce a report suited to the requirements of the average reader. Adapting this plan to the following pages, such recent data as seem not to be of immediate importance are omitted; and minute details of exploration and material not recorded herein, but to be found in the Society's field notes and study collections, will be available at the Museum to those interested.

As regards former explorations, only outstanding phenomena and features not duplicated in the recent examination are cited. Unfortunately, the material from the first examination of the group — that of Squier and Davis — is not easily accessible for study, it having been taken from this country to England at an early date. Their official report, however, will be found in Volume I

of Smithsonian Contributions, under the title "Ancient Monuments of the Mississippi Valley". As regards the second examination, conducted by Warren K. Moorehead, students are referred to the Field Museum of Natural History, Chicago, where the material therefrom is displayed, and to Professor Moorehead's report, published by that institution.

Through the kindness of officials of the Field Museum — the Director and the Chief of the Department of Ethnology — the writer was accorded permission to carry out an extended study of the Hopewell material in that institution and to make photographs, drawings, casts and replicas of specimens. Fortunately, as in the present Survey, many of the rare types of artifacts in the unexcelled Hopewell collection at the Field Museum are in duplicate. As a result, an exchange between the two institutions was effected whereby each secured types and material not previously contained in its collections. As a result of this exchange of original specimens and the making of replicas of others, the Society's display of Hopewell material now illustrates practically all types and materials secured by the several explorations of the group.

The thanks of the Society and its Survey are gratefully accorded to the following persons:

To Mrs. M. C. Hopewell, of Chillicothe, owner of the Hopewell group, for exploration privileges, and for presentation to the Museum of specimens taken from the group by the former survey.

To Mr. Albert C. Spetnagel, of Chillicothe, for having secured permission to examine the group, and for constant aid and support during its exploration.

To Mr. Morris Anderson, resident manager of the Hopewell farm, for assistance and co-operation during the period of exploration.

To Mr. D. C. Davies, Director; Dr. Berthold Laufer, Chief of the Department of Ethnology; and Dr. Ralph Linton, Ethnologist; Field Museum of Natural History, Chicago, for courtesies and assistance extended the Society's Curator of Archæology, during a period of ten days spent in the study of the Hopewell material in that institution.

EXPLORATION OF THE HOPEWELL GROUP OF PREHISTORIC EARTHWORKS

BY H. C. SHETRONE, CURATOR OF ARCHÆOLOGY

INTRODUCTORY

For the benefit of those readers who may not have found time and opportunity to acquaint themselves with the fundamentals of Ohio archæology, this brief outline of the mound-building peoples of the state is offered.

Throughout the valleys of the lower Mississippi and the Ohio rivers, together with many of their tributaries and adjacent territory, there have been observed prehistoric mounds and earthworks, popularly attributed to the so-called Mound-builders. Exploration of these tumuli and study of their burials and relics show that they were constructed, not by a separate and distinct race of people, but by various tribes and nations of American Indians. In a word, the trait of building mounds as monuments to the dead and of constructing earthworks for religious, social and defensive purposes, was almost world-wide among primitive peoples, and the native American Indians were no exception.

Within the confines of the state of Ohio three or more kinds or cultures of prehistoric inhabitants had developed the trait of mound-building. Two of these are of foremost importance. The so-called Fort Ancient culture were widespread and numerous and left

behind them extensive village sites. The Hopewell culture, the most highly developed of all the mound-building peoples, were responsible for the erection of a score or more of great geometric earthworks and accompanying mound groups, throughout southern Ohio and contiguous territory. It is to this culture that the Hopewell Group of Prehistoric Earthworks, the exploration of which is set forth in the following pages, belongs.

Lack of space precludes mention of more than a few of the outstanding characteristics of this and other cultures of the state. Origin, antiquity and disappearance are perhaps the three phases of the subject concerning which information most often is desired. As indicated above, the mound-building peoples belonged to the native American race, so that the question as to their origin becomes a part of the broader question as to the origin of the American Indian. Most persons are aware that scientific opinion now inclines strongly toward Asia as the place of such origin.

While it is a recorded fact that in certain sections of the country mounds have been built and used within historic times, there is no evidence of contact between the builders of Ohio mounds and white men; however, there is no reason to believe that the building of mounds in the Ohio area may not have prevailed well up to the time of the appearance of Europeans in the territory. The question of antiquity of the mounds, therefore, cannot be specifically answered, since a given mound might be not more than two or three centuries old, while another may have witnessed the lapse of ten or twenty centuries.

There appears to be but a single historical incident

having a possible bearing upon the disappearance from Ohio of the mound-building cultures; namely, the so-called Iroquoian invasion, which occurred about the year 1650. While the mound-building trait in the territory in question obviously had reached and passed its greatest development by that time, there is reason for believing that it may not have been entirely obsolete, in which case the Iroquoian conquest is a conceivable factor in its extermination. Other possible causes are those which have obtained throughout the history of human society — social and physical decadence, famine and pestilence, conquest and resultant assimilation or even annihilation. Archaeologists continue the search for evidence that may link the mound-building peoples with one or another of several historic cultures, but in so far as the Hopewell culture is concerned there appears to be little to indicate affinity with another stock.

The known facts with respect to these questions may be found in the various publications of the Ohio Archaeological and Historical Society, particularly in the *Archæological History of Ohio*, by Gerard Fowke. A comparative study of the several cultures is contained in a paper entitled *The Culture Problem in Ohio Archaeology*, by H. C. Shetrone, published in the *American Anthropologist*, (n.s.), Volume XXII, 1920.

In addition to the Hopewell Group, the subject of this report, other important groups of the Hopewell culture which have been examined and reports of which are available, are: the Harness Mound (Liberty Group), the Seip Mound (Seip Group) and the Mound City Group, Ross county; the Tremper Mound, Scioto county; and the Turner Group, Hamilton county.

I

HISTORICAL DATA ON THE GROUP

The Hopewell Group of Prehistoric Earthworks is situated in Union township, Ross county, Ohio, on the North fork of Paint creek, a tributary of the Scioto river.

While it is evident to the most casual observer that the sites occupied by all important groups of the Hopewell culture were carefully selected by their builders, the location of the Hopewell Group is easily the most impressive. The region corresponds to the glacial moraine and presents the interesting phenomenon of rugged unglaciated hills in close proximity to glacial formations of almost equal size and impressiveness.

Admittedly the most important of the several groups of earthworks of its particular class, it further shares a foremost place in historic interest and attention with the noted Mound City Group, a few miles to the eastward. From its pretentious size, its great number of burial mounds and the relatively high culture status represented therein, this particular group assumes rank as the metropolis of an important and interesting people who, in addition thereto, were responsible for the erection of other similar groups of earthworks throughout the valleys of southern Ohio; and since it was the first of its kind to be definitely examined, it has come to be accepted as the type group for its class of remains. The designation "Hopewell", as bestowed on this group, in honor of its owner, Captain M. C. Hopewell, has come to serve as a family name for all remains of its class,

wherever found, and to their builders. Thus we have, specifically, "The Hopewell Group", and generically, a mound, a group of mounds, or an earthwork, of the Hopewell culture; and, referring to their builders, the Hopewell culture group.

Historic interest in the Hopewell Group has been greatly stimulated by two partial examinations—the first by the pioneer explorers, Squier and Davis, and that of Warren K. Moorehead. The remarkable material accruing from these examinations directed attention of the archæological world to the importance of the group.

First serious consideration of the Hopewell Group is to be credited to Caleb Atwater who, in 1820, prepared a brief description and a map of the works.¹

A more extended account, accompanied by a detailed map, is that of Squier and Davis, in 1848. Their report furnished a satisfactory description of the appearance of the group, and it may be assumed that at the time of their observations agricultural activities had not greatly modified the original form of the mounds and earthworks. As an introduction to the present examination, covered in the following pages, their description, in part, follows:²

CLARK'S WORK; NORTH FORK OF PAINT CREEK

"The work here presented * * * is situated on the North fork of Paint creek, on the estate of W. C. Clark, Esq., and occupied the entire width of the second terrace, which here presents a broad and level plain, of exceeding beauty and fertility.

¹ Atwater, Caleb, *Description of the Antiquities Discovered in the State of Ohio*, Transactions and Collections of the American Antiquarian Society, Vol. I, 1820, p. 182.

² Squier, E. G., and Davis, E. H., *Ancient Monuments of the Mississippi Valley*, Smithsonian Contributions to Knowledge, Vol. I, p. 24-29.

Its general form is a parallelogram, twenty-eight hundred feet by eighteen hundred, with one of its corners somewhat rounded. On the side next the creek, it is bounded by a wall four feet high, running along the very edge of the terrace-bank, and conforming to its irregularities; these, however, are slight. Its remaining sides are bounded by a wall and exterior ditch; the wall is six feet high by thirty-five feet base, and the ditch of corresponding dimensions. The lines ascend the declivity of the table land back of the terrace, and extend along its brow, dipping into the ravines and rising over the ridges into which it has been cut by the action of water. Wherever the ravines are of any considerable depth, the wall has been washed away; but in all cases leaving evidences that it once extended uninterruptedly through. The bank of the terrace is thirty, that of the table-land fifty feet in height.

"The area thus enclosed is one hundred and eleven acres. To the right of the principal work, and connecting with it by a gateway at its centre, is a smaller work of sixteen acres area. It is a perfect square; its sides measuring respectively eight hundred and fifty feet. It has gateways at the middle of each side, thirty feet wide, and covered by small mounds, which are placed fifty feet interior to the walls. There are gateways also at the two outer corners, which are unaccompanied by mounds. The opening which leads to the principal enclosure is twice as wide as the others. The walls of the smaller work are much lighter than those of the large one, and have no attendant ditch.

"Within the area of the great work, are two small ones: one of them is a perfect circle, three hundred and fifty feet in diameter, bounded by a single slight wall, with a gateway opening to the west; the other is a semi-circular enclosure, two thousand feet in circumference, bounded by a slight circumvallation and ditch as represented in the plan. Within this last enclosure are seven mounds; three of which are joined together, forming a continuous elevation thirty feet high by five hundred feet long, and one hundred and eighty broad at the base. * * * There are other mounds at the points indicated in the plan, most of which have been explored; with what results will appear in the chapter on mounds. * * * Where the defences descend from the table lands to the left, is a gully or torrent-bed, which, before the construction of this work, kept the course indicated by the dotted line x. It was turned by the builders from its natural channel into the ditch, along which it still runs for a considerable distance; but at one place it has broken over the wall, obliterating it for nearly two hundred feet. It is dry at most seasons of the year; and, unless much swollen by the rains.

keeps the course of the ditch, terminating in a deep gully, formed by the flow of water from a copious and unfailing spring. This gully is made to answer as a ditch, for the space yet intervening, to the edge of the terrace. It is fifteen feet deep, by sixty or seventy wide. * * *

"The gateways of this work are six in number; one opening into the smaller enclosure to the east, two upon the table lands, one to the spring first mentioned, and two others towards the creek. Two considerable springs occur within the walls. It is not necessary, however, upon the hypothesis already advanced in respect to this work, to suppose its ancient population wholly dependent upon these sources for their supply of water; inasmuch as it is very evident that many centuries have not elapsed since the creek, now one hundred rods distant, washed the base of the terrace upon which it stands. * * *

"The slight wall along the terrace bank is composed chiefly of smooth, waterworn stones, taken from the creek, and cemented together by tough, clayey earth. The wall of the square is wholly of clay, and its outlines may be easily traced by the eye, from a distance, by its color. It appears, as do the embankments of many other works, to have been slightly burned. * * *"

It will be noted in their quoted description that Squier and Davis conducted examinations of certain of the Hopewell mounds, as evidenced in their statement that "There are other mounds at the points indicated in the plan, most of which have been explored; with what results will appear in the chapter on the mounds". Their final record of these, however, is rather indefinite. Specific mention is made of the examination of four small mounds and it is probable that tentative examination was made of some others of the tumuli.

THE MOOREHEAD EXAMINATION

Much more exhaustive, as will be noted in subsequent pages, was the examination of the Hopewell mounds by Warren K. Moorehead. His explorations, carried out in 1891-'92, were conducted for the Depart-

ment of Anthropology of the World's Columbian exposition. The vast amount of interesting material secured was exhibited at the Exposition and is now in possession of the Field Museum of Natural History, Chicago. His report, published some years later (1922) describes the group as he found it, details the work of exploration and illustrates the material therefrom.³

PRESENT EXAMINATION

Notwithstanding that partial examination by two previous explorers presumably had exhausted the greater number of the Hopewell mounds, and that many years of cultivation had obliterated several of the smaller mounds of the group, it was the sentiment of the Ohio Archæological and Historical Society that its examination should be completed. Through the kind offices of Mr. Albert C. Spetnagel, a Life Member and an ardent supporter of the Society, exploration privileges were graciously accorded by Mrs. M. C. Hopewell, owner of the land upon which the group is situated. The work of examination was begun late in the season of 1922, and was completed in August of 1925.

In keeping with the Museum's fixed policy of thorough and exhaustive examination, it was decided to carry out the exploration of the Hopewell group in the same manner as though no previous partial examinations had obtained. The need for such procedure was emphasized by the fact that former examinations of the group, in addition to being incomplete, were carried

³ Moorehead, Warren K., *The Hopewell Mound Group of Ohio*, Field Museum of Natural History, Publication 211, Anthropological Series, Vol. VI, No. 5.

out under difficulties which precluded the degree of thoroughness desirable in such work.

The additional labor in so large a group, which this plan entailed, will be at once apparent. In order that nothing might be overlooked and that complete floor plans of each mound might be prepared, all mounds, whether previously examined or not, were to be explored. In several instances, it is true, former explorations served to lighten the final examinations. For example, after Professor Moorehead's partial examination of the great central mound of the group (No. 25) the owner of the land had the entire structure graded down to about one-half its former height. As a result the present Survey, instead of having to raze a mound of more than 20 feet in height, found it not to exceed 14 feet at its greatest altitude. However, the surplus earth, which had been graded off the top and spread along its lateral margins, proved to be something of a handicap, for instead of our progress being through a series of progressive cuts of the normal conical sections, they were necessarily rectangular and scarcely less in height toward their ends than at center. This resulted in an unexpectedly high cubical content for the successive sections across the body of the mound.

RECENT ASPECT OF THE GROUP

Squier and Davis' map of the Hopewell group shows a total of 20 mounds which, while some of them do not bear numbers, evidently were intended to be numbered from 1 to 20. In his report, Moorehead, using the same map, assigns missing numbers and adds five mounds—18, 19, 20, 21 and 24. Our Survey was unable to verify

the existence of mounds 18 and 19, although the land corresponding to their map location was scrutinized under every condition of cultivation. Mounds 21 and 22 are very small supernumerary mounds located outside the earthwork and upon the plateau to the north. On the accompanying Map prepared by our Survey, the numbering of these two mounds, for reasons which will be apparent presently, is changed to 37 and 38. They, with seven others first located by our Survey, are supplemental in character, as will be noted in a subsequent page.

Since the map of Squier and Davis was drawn the Baltimore and Ohio railroad has been constructed through the group, effecting important changes therein. The old highway, as depicted on their map, is quite irregular in its course and passes directly over Mounds 9 and 10 and quite close to several others. However, in the construction of the railroad, in 1852, the right-of-way came to occupy in great part the old highway, which in turn was thrown to the north side of the railway and directly over and across Mounds 12, 6, 7 and 8. As may be noted on the new Map the railroad and the highway, entering the group from the east, run parallel in a straight course until well toward the western end of the rectangular enclosure, where they swerve to the north and pass out of the group some 200 feet to the north of the old exit. This change, not noted in the Moorehead report, has quite an important bearing upon the group and accounts for the disappearance of several mounds.

The only other changes of importance are those due to erosion and cultivation, resulting in the gradual low-

ering of the several mounds and the earthen embankments enclosing them.

As a result of careful scrutiny of the site previous to and during final explorations, our Survey added to the mounds shown on the earlier maps the following: Mounds 21 and 22, two low structures in the north central portion of the rectangular enclosure, which had been despoiled by cultivation, the plow-line extending to or below their bases; Mound 26, an important and undisturbed tumulus lying adjacent to and just south of the railroad, within the old orchard lot; Mound 27, just east of Mound 20 — a low mound which lay mostly within the plow line; Mound 28, a low but undisturbed tumulus at the extreme northern edge of the second terrace; Mound 29, a structure of some size just south of the main spring, which, although not shown on earlier maps, had been entirely explored; and Mounds 30 to 36, inclusive, comprising, with Mounds 37 and 38, nine small subsidiary mounds, lying entirely outside the enclosures.

With regard to this total of 38 mounds for the group, the Survey found the following conditions:

Mounds obliterated by railroad and highway: Numbers 6, 7 and 8 (in part); numbers 9, 10, 12 and 13.

Mounds destroyed by previous exploration and cultivation, in some instances the sites being indeterminate, and in others the mounds so low that their bases lay at or below the plow-line: Numbers 1, 5, 14, 15, 16, 18, 19, 21 and 22.

Mounds found to have been partly explored: Numbers 2, 3, 4, 7, 8, 23, 24, 25 and 27.

Mounds found to be undisturbed: Numbers 11, 17,

20, 26 and 28; and subsidiary mounds numbers 30 to 36 inclusive.

Supplemental or subsidiary mounds (lodge-sites): Mounds 30 to 38, inclusive. Numbers 37 and 38 were noted by Moorehead and numbered as 21 and 22. They had been examined by his survey. The remaining seven were first noted by our Survey, and the results of their examination will follow.

In the following pages an attempt is made to keep an otherwise interminable report within bounds. In the descriptions of individual burials certain characteristics which are reasonably constant do not warrant repetition; for example, uncremated burials almost invariably are extended upon the back. Where there is divergence from the general rule in any respect, mention is made thereof. The interested reader is asked to make use of the floor-plan maps, on which the exact locations, dimensions, orientation and other pertinent data are registered. Detailed descriptions and measurements of specimens will be found under Artifacts from the Mounds.

II

THE MOUNDS AND THEIR CONTENTS

MOUND NUMBER 1

This small mound, located well toward the northeast angle of the larger enclosure, is one of four examined by Squier and Davis — the three others being Numbers 2, 5 and 9. In their report (P. 157) they say:

“This mound, although one of the richest in contents, was one of the smallest met with, being not over three feet in height. Its deposit was first disturbed by the plow, some years ago, and numerous singular articles were then taken from it. Upon investigation, in place of the altar, a level area ten or fifteen feet broad was found, much burned, on which the relics had been placed. These had been covered over with earth to perhaps the depth of a foot, followed by a stratum of small stones, and an outer layer of earth two feet in thickness. Hundreds of relics, and many of the most interesting and valuable hitherto found, were taken from this mound, among which may be mentioned several coiled serpents carved in stone, and carefully enveloped in sheet mica and copper; pottery; carved fragments of ivory; a large number of fossil teeth; numerous fine sculptures in stone, etc.”

It is significant that the coiled serpent effigies (representations of the rattlesnake) bore supposed feather markings about the head, thus suggesting the plumed serpent. Unfortunately, they were badly damaged when removed.

At the Turner Group,⁴ in Hamilton county, Professor Putnam found a horned serpent effigy, in mica,

⁴Willoughby, Charles C., and Hooton, Earnest A., *The Turner Group of Earthworks, Hamilton County, Ohio*, Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. VIII, No. 3, 1922, p. 68.

The Turner Group was examined under the direction of Professor Frederick Ward Putnam, Peabody Museum, Harvard University, beginning in 1882 and continuing for several years thereafter. During the greater part of the time the work was under the direct supervision of Dr. Charles L. Metz, of Madisonville, Ohio. The report on exploration of the Group was published subsequent to Professor Putnam's death.

which in many respects closely resembles those discovered by Squier and Davis.

On the site of Mound Number 1, now practically obliterated, the present Survey picked up fragments of carved bone and several sharks' teeth.

MOUND NUMBER 2

From the historic standpoint at least, Mound Number 2 is the most spectacular of the Hopewell tumuli. It has the distinction of having bared its treasures to three separate examinations, and of yielding bountiful results to each. Squier and Davis, in 1845-'46 were the first to probe its contents. They have this to say (p. 158):

"(The mound) is remarkable in being very broad and flat, measuring at least 80 feet in diameter by but six or seven in height. It has two sand strata; but instead of an altar, there are two layers of disks chipped out of hornstone, some nearly round, others in the form of spearheads. They are of various sizes, but are for the most part about six inches long, by four wide, and three-quarters of an inch or an inch in thickness. They were placed side by side, a little reclining, and one layer resting immediately on the other. Out of an excavation six feet long by four feet wide, not far from six hundred were thrown. The deposit extends beyond the limits of the excavation on every side."

Further examination of Mound Number 2 was conducted by Moorehead in 1891, with the result that more than 7,000 additional disks were recovered. This great number, combined with those taken out by Squier and Davis and some scattering lots in the hands of individuals give a total, according to Moorehead's calculation, of 8,185 disks.

After receiving such marked attention from explorers, Mound Number 2 seemed to offer little to a third examination. However, since no mention of either burial or basin was made by former explorers, and since

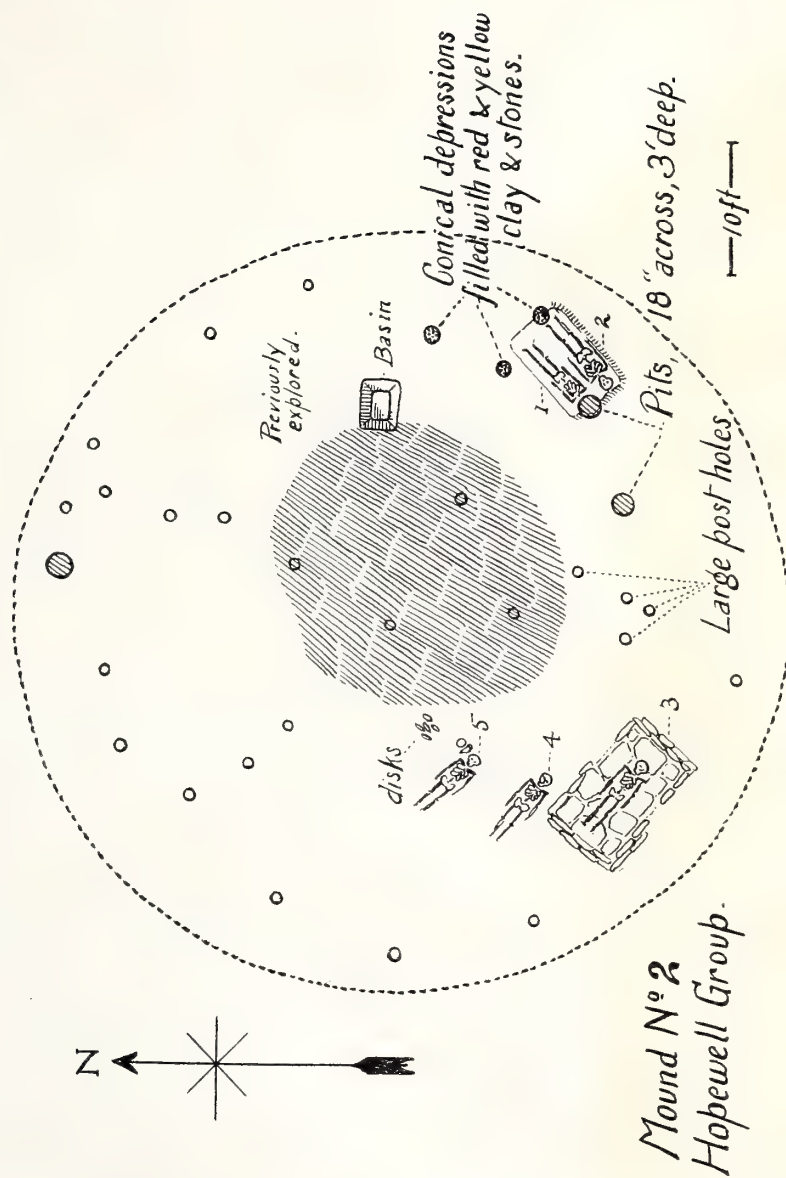


Fig. 1. Floor Plan of Mound Number 2. Shaded Area Corresponds to location of Great Deposit of Flint Disks.

the impression seemed to prevail that the mound was merely a heap of earth thrown over the great cache of disks, it was believed that careful examination might throw some light upon its purpose or significance. Furthermore, it was felt that if a few of the flint disks might be found, *in situ*, the work entailed would be justified.

Briefly, the results of this Survey's examination were the finding of five burials, rich in artifacts; a crematory basin; a number of flint disks, in place and undisturbed; and upwards of 100 additional disks scattered loosely through the mound. The floor plan of the mound is shown as Figure 1.

Burials 1 and 2 occupied a common grave well out toward the southeastern margin of the mound. The remains, uncremated, (Fig. 2) lay extended upon their backs, heads toward the west. They occupied a rude rectangular platform or earthen fill extending about 6 inches above the floor, and were unaccompanied by any special preparation. No log-molds indicative of the usual timber enclosure were present, and the hard black muck of which the mound mostly is composed had been filled in directly upon the bodies, the depth of which below the present surface of the mound was about 18 inches. Both skeletons, despite the lack of the usual burial preparations, were in a fair state of preservation.

Skeleton Number 1 was that of a male apparently about 25 years of age, exceptionally tall and strongly built, the femur measurement being more than 19 inches in length. In each hand was found a finely made copper ear-spool, one of which was surfaced with silver foil. A feature of this burial not understood when first

uncovered was the apparent absence of the skull. Where the skull should have been, however, lay a finely preserved head-plate of copper, curved to fit the crown, with perforations at the corners for attachment. This helmet-like plate was partly embedded in the loose underlying soil and upon investigation it was found that

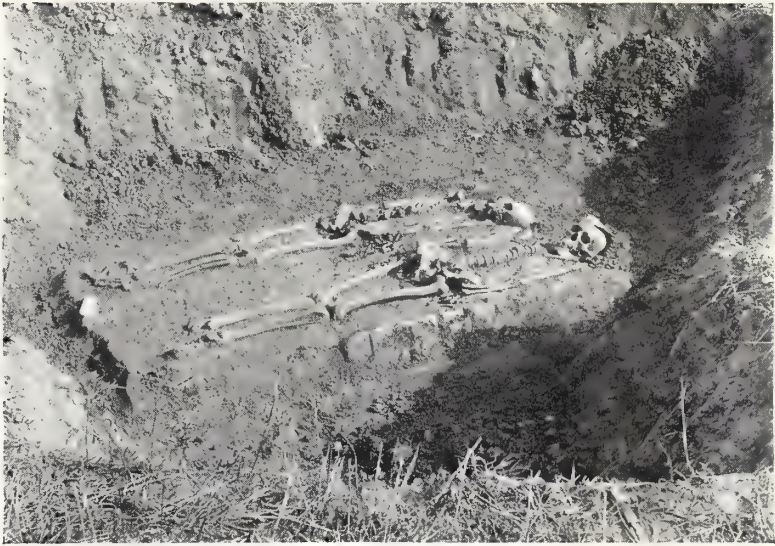


FIG. 2. Double Burial (Skeletons 1 and 2) of Mound Number 2.

a pit, 18 inches in diameter and 4 feet deep, had been excavated directly beneath the skull. This was filled with loose loam and apparently had contained a large post, or had been left unfilled, with some sort of temporary covering. When the perishable content or covering gave way, the skull had fallen into the pit, and was found $2\frac{1}{2}$ feet below its normal position, face downward. Scattered between the skull and the surface were found the lower jaw and the cervical vertebrae.

Skeleton Number 2, lying alongside and to the south of Number 1, was that of a young adult, apparently a female, measuring approximately 5 feet 8 inches in height. At the left hand of the skeleton lay about 100 well-made copper beads, with which were associated woven fabric and bark. Near the left foot, and between the feet of the two skeletons, lay a finely made copper adze blade, showing plainly across its convex face where a wide band, or withe, had secured it to the handle.

Just below the feet of Skeleton Number 2, but not extending upward into the clay fill upon which the bodies lay, was found a peculiar feature. A hole, in the form of an inverted cone, 14 inches across the top and 15 inches deep, had been dug into the floor. This was partly filled at the bottom with stones, and thence upward with highly colored red and yellow burned clay. When the mound earth had been removed from the floor line this circular surface appeared as a colorful mosaic set into it. It was apparent that the clay filling had been taken from a crematory basin, as portions of it retained the smooth burned surfaces characteristic of those receptacles. A second and exactly similar feature was found five feet northwest from the above, while two additional ones were located as shown on the plan. At a distance of 10 feet southwest from the pit at the head of Burial Number 1 was found another altogether similar pit, filled with loose mold. Scattering post-molds were noted as shown on the accompanying floor plan.

A Crematory Basin,⁵ (Fig. 3) measuring 44 inches

⁵ The characteristic basins found in mounds of the Hopewell culture have been designated as altars by several writers. Since with one or two exceptions the surveys of this Society have not found them to contain offerings, the most plausible explanation seems to be that they served as places of cremation.

by 35 inches, trending north-west and south-east, was found bordering the central dug-over space of previous exploration. It was quite bold in form, but the muck soil of the mound was so incorporated with it that it was difficult to uncover without disfiguration. The construction of this basin, which was without artifacts or ashes, was interesting. Fully two cubic yards of the usual bright yellow clay used for basin construction had been



FIG. 3. The Crematory Basin of Mound Number 2.

spread upon the floor level, and the basin proper shaped and troweled into form at its center.

Burial Number 3 lay 15 feet in from the south-west margin of the mound. It occupied a pretentious stone grave, (Fig. 4) the outside measurements of which were 11 feet by 8 feet. In preparing the structure, flat stones of large size had been set vertically at the ends and sides, and laid horizontally on the floor at a depth of one foot beneath the original level or base of the mound. At the center of the grave, extended upon the back with head to the south-east, lay the skeleton of a young adult, 5



FIG. 4. Burial 3 (in Stone Grave) and Burial 4; Mound Number 2.

feet 6 inches in height. Owing to the rather poor state of preservation the sex of the individual was not definitely determinable. At the right side of the head lay a finely preserved ocean-shell container; several thousand beads of ocean shell were strewn over the head, face, neck and shoulders; a copper plate lay under the left shoulder and another under the hips; in each hand was a copper ear-spool, while between the feet was found a small carefully made copper axe. The depth of the mound proper above this burial was two feet, and the grave itself had been dug to a depth of one foot below its base. This was the only burial of the entire group which occupied a highly specialized stone grave, although this type of burial was common at the Turner Group.

Burial Number 4, located a few feet to the north of Burial 3, contained the skeleton of a young adult of about 5 feet 9 inches in height. The burial (Fig. 4) was without noticeable preparation, and lay extended upon the back with head to the south-east. At the base of the skull lay a fine large copper plate; at the right of the skull, a large ocean-shell container; many shell beads and a few of pearl were strewn over the head and neck, and in each hand lay a copper ear-spool. The skull was removed intact.

Burial Number 5 was perhaps the most interesting of Mound Number 2. It lay some 6 feet to the north of Burial Number 4, and contained the skeleton of a very old male of approximately 5 feet 10 inches in height (Fig. 5). This individual apparently was a person of importance, since the burial was unusually elaborate.

Although no timber structure had enclosed the remains, they were profusely supplied with artifacts. At the head lay an unusually fine shell container, made from a convoluted ocean shell (*Fasciolaria*) measuring 15 inches in length; in each hand were two copper ear-pools; at the neck were many shell beads; a mussel-



FIG. 5. Burial Number 5, with Trophy Skull; Mound Number 2.

shell spoon lay at the right foot; a small plate of mica near the right shoulder; and under the head was found a rectangular copper plate, upon which is preserved a finely woven fabric. Ten inches to the right of the skull lay a detached human skull—that of a young male upon which rested a curved helmet-like copper plate. This separate skull, apparently a trophy, shows dis-

tinctly the marks of the flint knife employed in detaching the scalp and tissues.

While the skeleton proper of this burial was badly decomposed its skull, as well as the trophy skull, was in an excellent state of preservation, as shown in the cut (Fig. 6).

At the western margin of the central space excavated by former examination there was found a small deposit of the flint disks (Fig. 7) for which this mound is noted. These were five in number and had not been disturbed. Two of these were placed horizontally and the three others set upon edge against them. The photograph shows these disks in place, and also the floor level, the vertical cut of the mound, and its top. A small amount of coarse gravel placed around the disks and the undisturbed gravel stratum beneath them may be seen in the cut. A number of perfect and broken disks — perhaps 100 in all — were found throughout the mound.

Reference to the accompanying floor plan of Mound Number 2 shows it to have been a much more interesting and complicated structure than had been supposed. In addition to five burials, all rich in accompanying artifacts, there will be noted the more or less regular plan of post-molds which, in this mound, are unusually large and deep, ranging in diameter from 6 inches to 10 inches, and being from 3 feet to $3\frac{1}{2}$ feet deep. The several pits, as that underneath the skull of burial Number 1, and the conical depressions filled with colored earths, are difficult to account for.

The central portion of the mound from which the great deposit of disks was taken represented a circular



FIG. 6. The Skull of Burial 5 (below) with Trophy Skull;
Mound 2.

space some 20 feet in diameter. The mound was unusual in having two floor levels, the lower of which was rather poorly defined. The upper level, which was from 8 to 10 inches higher, and which seems to have ex-



FIG. 7. Remnant of the more than 8,000 Flint Disks Originally Deposited in Mound Number 2.

tended continuously throughout the mound, was strewn with a thin covering of whitish limestone gravel. Apparently the deposit of disks had been placed one layer on each of the two floors. Of their total number, only

one was a finished specialized implement. It was turned over by Professor Moorehead to Mr. Hopewell, owner of the mounds, and presented by Mrs. Hopewell to the Museum at the close of the final explorations. This remarkable specimen, which measures 9 inches in length and 6 inches in width, is illustrated as Fig. 66.

MOUND NUMBER 3

Of this structure, Moorehead (p. 101) says:

"In this mound we found an altar whose contents had been removed, probably by Squier and Davis, a copper celt, small knives, and a few other objects."

The present Survey found Mound Number 3 to be approximately 55 feet in diameter with an altitude of 30 inches. With the exception of a marginal strip 6 feet across, the mound had been entirely dug over. Well out toward the north-west margin was uncovered a basin of small size and poor construction, which had been disclosed by former examinations, as it lay within the disturbed area. At the south-east, an undisturbed cremated burial was uncovered, lying just below the plow line. It contained no artifacts.

The only development of value resulting from the re-examination of Mound Number 3 was the finding upon the floor within the disturbed area of two pottery fragments of an unusual kind. One of these fragments, 2 inches across, is from the body of a medium-sized vessel, while the other, of similar size, is a portion of rim apparently from the same vessel. The paste of which they are composed is of a uniform dark chocolate, with a very slight tempering admixture of shell or other calcareous matter, while the outer surfaces are

covered by a distinct slip varying in color from ocherous to brick red. This surface appears to be the result of intentional painting rather than an incidental accompaniment of firing. Paste, tempering material and surface coloring all are foreign to, or at least very unusual in, the Hopewell type of pottery, and closely resemble ware of the south-western group. A large sherd from this mound, and apparently from the same vessel, is in the Hopewell collection at the Field Museum.

MOUND NUMBER 4

This structure lies just to the east of and almost adjoins Mound Number 25. It was originally 6 feet in height but at the time of final examination it measured 2 feet and 8 inches high at center and had a diameter of approximately 45 feet. The entire central portion had been dug over, as indicated on the map of the floor plan (Fig. 8).

Although Moorehead makes no mention of Mound Number 4 in his report, he describes its examination in a preliminary paper printed in the *Antiquarian*.⁶ In this article he states that the central portion of the mound, 8 by 10 feet in size, had been excavated, presumably by Squier and Davis. He mentions the finding by his survey of a perforated trophy skull, ocean shells, and copper ornaments.

In the marginal strip left undisturbed the present Survey found a total of 9 burials. The mound was not a highly specialized one. The floor level was moderately distinct and the body of the mound was composed

⁶ Moorehead, Warren K., *The Hopewell Group*, The *Antiquarian*, Volume I, Columbus, 1897.

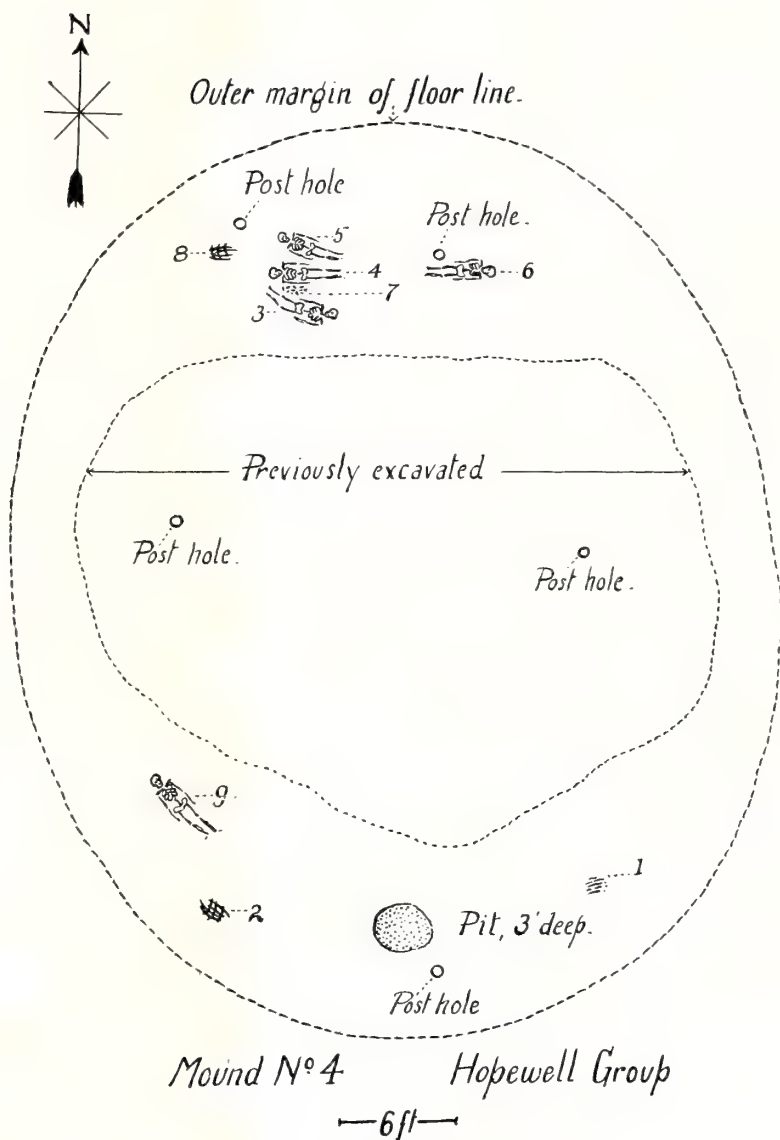


FIG. 8. Floor Plan of Mound Number 4.

of rather homogenous soil, dark in color, with occasional small amounts of gravel interspersed throughout its mass. It was devoid of a crematory basin and none of the burials showed a prepared grave or accompaniment of timber enclosure. A single one of the nine was cremated and the usual custom of placing uncremated remains upon the back with feet extended was carried out.

Just within the southern border of the mound was a pit, $2\frac{1}{2}$ feet across, and extending 4 feet beneath the floor level. It contained dark soil and ashes.

A Bundle Burial—one of the few found in the entire group—occurred at the south-west margin, just below the plow line and 8 inches above the floor level. It lay in a deposit of coarse gravel, and comprised long bones representing two or more adult individuals, and a single skull. An interesting feature was the ankylosis of a tibia and its corresponding fibula, the bones being securely united at two distinct points. The deposit was accompanied by a copper ear-spool and a bone awl.

Burial Number 3 was that of a young adult of large size, lying in a grotesque position, with arms and legs “akimbo”, unaccompanied by specimens. It is shown in Figure 9, along with Burials 4, 5, 6 and 7.

Burial No. 4 lay in close proximity to Number 3, the knees of the latter almost touching the skull. It likewise contained the skeleton of a large-sized young adult. Its peculiar position—head well down to the floor level, pelvis higher, and knees and feet almost reaching to the plow-line,—was explained later when a cremated burial was found directly beneath it, upon

the floor line. At the neck lay two cut and perforated wolf jaws.

With Burial Number 5—the skeleton of a youth—were found, at the right elbow, two finely made flint-flake knives and 12 perforated canines of the raccoon. Large flat stones had been set up vertically at each side of the head.



FIG. 9. Burials 3 to 7, of Mound Number 4.

Burial Number 6 comprised the remains of a child, with which had been placed a small container made from an ocean shell.

Burial Number 7 was a typical cremated burial, and was placed beneath the shoulders and back of Burial 4. There was the usual amount of coarsely charred bones, deposited without preparation and with them a long flint-flake knife, remnants of a shell ornament, four

copper ear-spools and a finely made perfect platform pipe, of gray Ohio pipe-stone.⁷

Burial Number 8, cremated, was without artifacts.

Burial Number 9 comprised the skeleton of a young adult of medium size, in a poor state of preservation. At the head had been placed seven flake knives and a notched arrow-point, all of handsome translucent chalcedony. The burial lay well out toward the south-west margin of the mound.

MOUNDS 5 AND 6

Previous explorations and long-continued cultivation have resulted in the complete demolition of these tumuli. Squier and Davis' description of Number 5 (P. 156) follows:

"In this mound the altar was covered with stones; and instead of the usual sand stratum, there was found a layer of large flat stones, corresponding to it. The altar was composed of earth elevated two and a half feet above the original level of the soil, and was five feet long by three feet four inches broad, the sides sloping at an angle of nearly 30 degrees. It was faced on the top and on the sides with slabs of stone, quite regular in form and thickness * * *. The altar bore the marks of fire, and a few fragments of the moundbuilders' ornaments, a few pearl beads, etc., were found upon and around it."

The employment of stone, as described, both as a covering for the basin and in place of the gravel stratum, is interesting and unusual.

⁷ The so-called Ohio pipe-stone is a highly indurated almost flinty variety of fire-clay, occurring in extensive deposits in Scioto County, Ohio. Its range of color is broad, the pink and red phases so closely resembling the Minnesota catlinite as to be almost indistinguishable to the novice. The material was extensively used by the Hopewell peoples and to a lesser extent by other Ohio cultures. For particulars see Mills, William C., *The Feurt Mounds and Village Site*, Certain Mounds and Village Sites in Ohio, Vol. III, Pt. 1.

Mound Number 6 had entirely disappeared at the time of the final examination. Never a large mound, it has entirely yielded to cultivation and the construction of the highway which in part passes over it.

MOUND NUMBER 7

Of the four minor mounds (Number 5, 6, 7, and 8) lying within the embankment enclosing Mound Number 25, the only one which in any degree had survived destruction was Mound Number 7, and even in this instance the survival was more apparent than real. The southern one-third of the structure had been obliterated as a result of construction of the railroad, while the one-third portion to the north was found to have been completely examined. The central portion lying beneath the highway seemed to offer possibilities, since the road-bed, instead of being cut through the mound, had been carried over it, with only a foot or two graded off its top.

Since the highway is little traveled and unimportant, permission to disturb the portion thereof immediately overlying the mound was secured from the township commissioners, the only requirement being that the Survey prepare a proper detour.

The principal result of the final examination of Mound Number 7 was the light thrown on the character of what proved to have been an important and unusual tumulus. As nearly as could be determined the mound originally had been elongated, measuring 85 feet from north to south and having a width of 75 feet. Its recent height, alongside the highway, was 7 feet, and apparently the original elevation had been something near ten feet. Marking the outer margin of the mound

was a wall or circumvallation of stones and gravel, from $3\frac{1}{2}$ to 5 feet wide and from one foot to 20 inches in height. Within this corral-like wall was a carefully prepared floor level, strewn with gravel and sand. It was found, however, that the sole purpose of the mound proper was to cover a primary mound, occupying its center.

This primary mound, or core of the large mound, was elongated with the mound proper. Its width at center was nearly 50 feet, while its length, owing to disturbance, was indeterminate, but probably about 60 feet. Its outer margin and lower slope had been marked by timbers and by a covering of flat stones, some of them quite large. The upper slope and top were covered by a stratum of yellow sand.

Unfortunately, this interior mound had been examined by means of a drift or cut carried in from the railroad grade at the south side. No definite record as to who effected this examination is to be had, but it is understood that at the time of the construction of the railroad, in 1852, numerous fine specimens were taken from this mound. With one burial there was found an elaborate head-plate of copper (Fig. 104). This specimen was secured by Mr. John Seip of Chillicothe who many years later presented it to the Museum. The drift carried into the interior of the primary mound had disclosed three separate burials, its only contents. The locations of these graves were readily apparent to our Survey, and the skeletal remains, which had been thrown back into the trench, were recovered. These, strangely enough, were perhaps the best preserved of any secured in the entire Hopewell Group, despite the

fact that they had been disturbed more than three-quarters of a century previously and carelessly thrown back into the mound. One skeleton in particular was exceptionally large and strong, the bones indicating an individual of well over six feet in height. A perfect and finely preserved skull with lower jaw was recovered, which appears to have been in the nature of a trophy skull. A feature is the fact that the occipital bone has been removed, apparently cut by a flint implement, and somewhat ground off along the resulting edges. Two fragments of human skull (parietal) were picked up in the loose earth of the trench which bear neatly drilled holes, $\frac{1}{8}$ inch in diameter. The skulls and other bones of two of these disturbed burials were deeply stained by copper, indicating that they were richly supplied with specimens.

One of the three burials — that at the north side of the interior mound — had not been completely removed. Bones of the lower right leg and foot and finger bones of the right hand remained in place. At the right foot were found a number of shell and pearl beads, while at the right hand lay an exquisite flint spear-point, 4 inches long and 2 inches wide, fashioned from translucent pink and white Flint Ridge chalcedony. A number of beads, copper-covered buttons and other small objects were found scattered through the disturbed soil.

It is interesting to note that not a single post-hole nor a sign of fire or burning was to be seen in the whole of Mound Number 7. It contained no crematory basin.

MOUNDS 8, 9, AND 10

Mound Number 8, closely adjoining Number 7 on the west, was mostly destroyed by the highway. What remained of it was examined by Moorehead, with scant return (p. 102). Mounds 9 and 10 were entirely obliterated by the highway and by Squier and Davis' examination. Of Mound Number 9, they (p. 155) have this to say:

"The altar, instead of occupying the center, is placed considerably toward one side; and a layer of charcoal fills the corresponding opposite side. Over the altar curves a stratum of sand, and over the layer of charcoal another. This altar was the smallest met with. It was round, not measuring more than 2 feet across the top. It was nevertheless rich in remains."

Among the objects taken from this basin, they mention several thin finely made blades of obsidian; tastefully cut scrolls of mica; woven fabric; fragments of bone needles and gravers; pearl beads, and so forth.

MOUND NUMBER 11

Mound Number 11 was not examined by Moorehead, owing to its location within the orchard lot, the owner not caring to have the sod disturbed.

Our Survey found Mound 11 to be upward of 50 feet in diameter and 18 inches in height at center. During the course of its examination it was disclosed that at some former time a test hole, 5 feet in diameter, had been sunk at center, evidently without disclosing anything. Another hole had been dug midway between center and the north margin, which had disclosed a small circular basin, $3\frac{1}{2}$ feet across and 3 inches deep. This basin, burned to a red color to a considerable depth,

apparently was one of the so-called "round altars" mentioned by Squier and Davis as occurring in other mounds of the group. Apparently it had contained a cremated burial, since charred human bones were found alongside it and scattered from floor to top of mound.

Well out toward the south side of the mound the Survey found an interesting and perhaps unique deposit. (Fig. 10.) Alongside a small and highly specialized crematory basin, measuring only 20 inches by 28 inches, lay a cremated human skeleton. It was that of an adult, and the pelvis and vertebrae lay in place, only partly consumed. With it were two sheets of mica and a few pearl beads. Bordering this burial, to the south, lay an extensive deposit of obsidian, mostly in the rough, occupying a rounded rectangular space measuring 6 feet by 7 feet. For the most part this deposit was such as would result from the manufacture on a large scale of chipped implements — flakes of every size and shape, some of them as much as 4 inches long, and very thin; chunks and small blocks of unworked obsidian, a number of which (Fig. 11) showed definite bruising and wear, presumably as a result of friction one with another in the long journey incident to their transportation from the far West. However, several notched arrow-points which had been discarded either as a result of defects, or from being broken in manufacture, and a number of cores (Fig. 12) from which delicate flake knives had been thrown off, were in the mass. Further, there were found portions of two figures cut from mica, and a cut and polished specimen of green chlorite. This specimen is flat on its base, and oval above, in form an elongated cabochon. The de-



FIG. 10. Floor of Mound Number 11, showing Crematory Basin, Cremated Human Remains and Offering of Obsidian, with Encircling Stones.

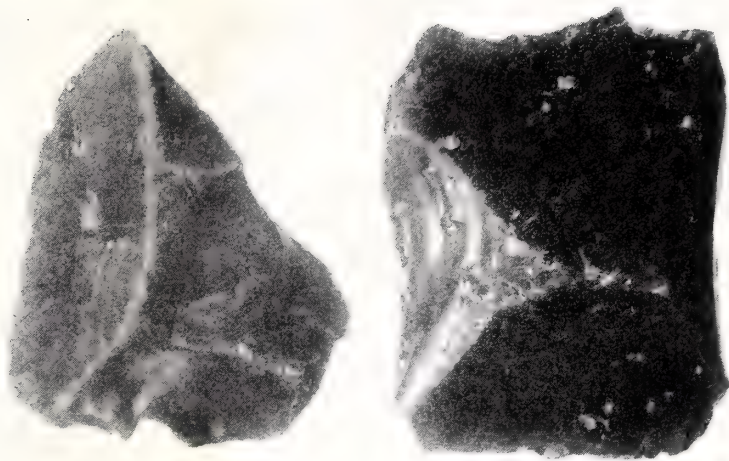


FIG. 11. Obsidian from the Offering in Mound 11, showing Bruised Edges as a Result of Primitive Transportation.

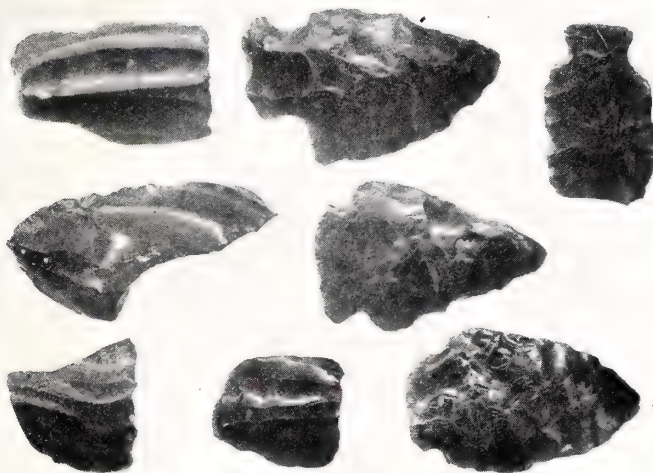


FIG. 12. Cores and Arrow-points, from the Obsidian Deposit, Mound 11.

posit of obsidian, which is believed to be from the Yellowstone Park district, weighs close to 300 pounds. The finding of so great an amount of raw obsidian seems to justify the surmise that the fine obsidian implements found in Mound 25 by the former survey were fashioned on the site of the Hopewell Group.

Encircling the cremated burial and the deposit of obsidian was a row of stones, widely spaced, with an opening toward the basin.

MOUNDS 12, 13, 14, 15 AND 16

With the exception of Number 16, all these have been entirely obliterated. The site of Number 16 is still evident, but examination showed that the plow-line has reached and mostly destroyed its base level or floor.

MOUND NUMBER 17

In the extreme north-east corner of the large enclosure, at the very foot of the terrace leading to the plateau, is a small mound, at the time of these explorations almost undiscernible. This mound, shown on the map of Squier and Davis, without number, is designated by Moorehead as Number 17. In the latter's report (p. 90) is a description of its examination. However, Moorehead clearly confused this mound with another (see description of Mound No. 29) or rather, erred in the matter of designating on his map the number of the mound in question.

The present Survey found Mound Number 17 to be altogether undisturbed, and the most prolific in results,

aside from Mound Number 25, of any of the entire group. Its apparent height was not above six inches, and except when its surface was freshly plowed its location was difficult to determine. At best, the mound appeared to be merely a part of the lower slope of one of the many spurs which project from the terrace declivity into the plain below. However, it proved to be actually 18 inches in height, the apparent lower altitude being due to the filling in around it of detritus from the slope above, as the result of erosion, the original level of the surrounding surface thus being elevated at least one foot.

The mound was composed of the clayey loam of the surrounding surface with some admixture, here and there, of gravel. The floor, (Fig. 13) not particularly well defined, had an extent of about 38 feet north and south, by 32 feet. A few scattered stake-holes, but no post-molds, were present. There were no burials of human remains. Instead, the mound seems to have been erected over the site of two distinct and important sacrificial or ceremonial offerings of artifacts.

Ceremonial Offering Number 1, south of its center, occupied an oval space 5 feet by 7 feet, alongside and partly filling a rectangular basin of typical form, measuring 22 by 26 inches. Perhaps a cubic yard of the peculiar yellowish-green clay so often associated with burials and deposits of the Hopewell type had been placed upon the oval space mentioned, and upon and intermixed with this were the following objects:

A large beautifully carved platform pipe, of steatite, each end of the stem representing the head of the wild duck, the necks running back and intertwining around the bowl; a very large plain

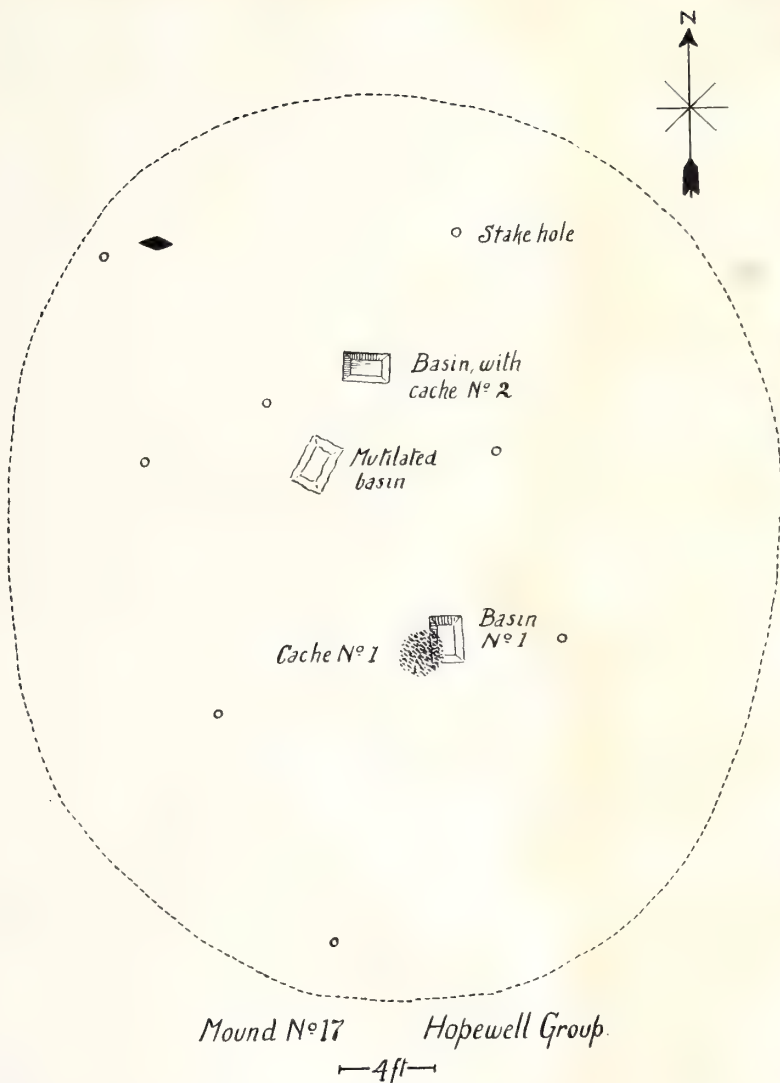


FIG. 13. Floor Plan of Mound Number 17, in which two Important Offerings were found.

platform pipe, of drab Ohio pipestone; 10 plain platform pipes, and fragments of 10 or more others, of Ohio pipestone; a hollow (boatshape) ceremonial in the image of the eagle, finely executed, eyes set with pearls, Ohio pipestone; hollow image, head and neck of the crow, made from black shale; 2 small saucer-shaped dishes, finely made, of micaceous stone (so-called gold-stone); 2 large disks, or discoidals, of fine-grained sandstone; 3 cones, of chlorite and gold-stone; 2 gorgets, of green chlorite; 6 large tablets, of Laurentian slate; 2 bar-like gorgets, of slate; a long slender plummet, of granite; 2 large finely made rings, of slate; a large obsidian spear-point; 2 large discoidal-like specimens, made from transparent quartz crystal; a copper perforator, resembling a 20-penny spike; 2 heavy copper anklets or bracelets; a large copper axe; a copper pendant, circular, with bosses; a human head, in the round, made from copper; 10 cup-shaped objects of copper; a small perforator of meteoric iron; buttons, beads, arrow- and spear-points of flint; sharks' teeth, carved bone fragments, a copper ear-ornament, a silver-covered button, potsherds; many pieces and chunks of graphite, foliated or micaceous hematite, "gold-stone", and so forth. At the center of the deposit there had been placed a large circular plate, worked from a peculiar "cone-in-cone" stone, which had become badly deteriorated. With the deposit there was a remarkable series of celts, or ungrooved axes, from 1½ to 15 inches in length. Several of the larger of these celts weigh 5 to 6 pounds each. The materials from which these implements are made include granite, gabbro, slate, and so forth. Most of them are very carefully made, while others resemble digging tools, one of which shows the mark of the thong by which it was attached to its handle, mattock-like.

Many of the finer specimens among the above were undamaged, while others had been intentionally broken. Fortunately, with a few exceptions it was possible to recover all portions of specimens, and to effect restorations. The more interesting of the specimens from this cache are shown in the cuts.

There was evidence of considerable burning in connection with this cache, and a good deal of charcoal and charred wood were in the deposit. However, it appears that the burning had not taken place where the

objects were deposited, and the fact that in several instances portions of ceremonially broken specimens were not included in the cache, leads to the presumption that the ceremonial fire had been kindled elsewhere, and that the offering afterwards was scooped up and carried to the place of deposit.

Near the center of the floor space of the mound there was found a typical rectangular basin, badly mutilated, which apparently had been used and then abandoned in favor of one or both the other basins of the structure.

Deposit Number 2 (Fig. 14) was located well toward the northern margin of the mound and marked the first instance, in so far as the present Survey is concerned, where a deposit or offering of great importance



FIG. 14. Sacrificial Offering Number 2, Mound 17; before Removal.

was placed directly within a basin. The basin, (Fig. 15) in this instance, was of typical form and measured 18 inches by 22 inches at the rim. It was carefully constructed and was burned red to a considerable depth beneath its base. The deposit of specimens filled and extended outward from the basin, covering a circular space $4\frac{1}{2}$ feet across. The objects were intermingled with earth, clay and charcoal, apparently intentionally.



FIG. 15. Basin in which Offering Number 2, Mound 17, was Deposited.

Immediately over the center of the basin and at the central point of the deposit lay a large gorget-like object of sandstone, measuring $8\frac{1}{2}$ inches long by $4\frac{1}{2}$ inches wide. This object corresponded to the large decomposed disk found at the center of Deposit Number 1, and to a similar disk in the great deposit of the Tremper Mound.⁸ Instances of similar marking of shrines on which such offerings were made are of frequent occurrence.

⁸ Mills, William C., *The Tremper Mound, Certain Mounds and Village Sites in Ohio*, Volume II, part 3.

Other objects of the cache are: Spatulas of bone, mostly broken; numerous fragments of potteryware, mostly utility; cut strips of mica and fragments of designs; 3 flint-flake knives; 10 bear claws; 2 hammer-stones of granite; 3 granite celts; 2 elongated specimens of granite, use unknown; a club-shaped implement of sandstone; a fine bar-shaped ornament of chlorite; a rare cup-shaped ornament of crystal quartz; 3 boat-shaped ornaments, perforated, made from large quartz crystals; 3 bar-shaped ornaments of Ohio pipestone; 6 bar-like objects of chlorite; 15 gorgets, tablets, and so forth, of chlorite; 2 notched and decorated specimens of green chlorite; 30 cone-shaped specimens of chlorite; 50 cones made from pyrite nodules; and a finely made grooved axe.

The finding of a grooved axe in a mound of the Hopewell culture is probably unique; and there appear to be only two or three authenticated instances of the finding of this implement in mounds of any culture in Ohio. The cones of pyrite (Fig. 118) are extremely unusual and interesting.

As in Deposit Number 1, specimens in the second cache were ceremonially broken up, but to a lesser degree. Something near one-half the total number were undamaged or slightly broken, while most of the others, broken in two or more parts, were readily restored. While several fragments of human skull were identified with this cache, it, like Deposit Number 1, appears not to have been accompanied by cremation of human remains.

MOUNDS 18 AND 19

On the map prepared by the present Survey are shown Mounds 18 and 19, as located on Moorehead's map. However, our Survey was unable to determine even the sites of these mounds, although the field was under cultivation and was scrutinized under every possible condition. Present and former tenants of the farm

had no recollection of mounds having existed at the points shown on the earlier map.

Of the two mounds, Moorehead says (p. 92):

"It (No. 18) was found to be about 75 feet longest diameter by 55 feet east and west, and 3 feet 8 inches in height. There was an altar in it, the base of which was 1 foot 4 inches long by 1 foot 3 inches in width and $2\frac{3}{4}$ inches deep. * * * In this mound there were some incised human maxillaries, a platform or monitor pipe, and various layers of different colored earth."

"The men dug out No. 19, which appears to have been disturbed. This was a small mound 54 by 53 feet and 3 feet high. It contained a rude stone layer and an altar of clay, in the depression of which were carbonized bones, some human, some mica and galena, fragments of bone implements and two flake knives. The altar was taken out entire. As it was only partly burnt and not much harder than sun-dried brick, no little difficulty was experienced in removing it. It was not shipped, and still lies in the mound, boxed, and covered with 3 feet of earth."

MOUND NUMBER 20

Of this mound Moorehead (p. 94) says "(it) is one of a group of four, numbered 9, 10, 11 and 20, which form almost a square." He also records its examination.

It is clear, however, that this structure is a victim of mistaken identity, since our Survey found it to be undisturbed. The most plausible explanation, viewed in the light of completed explorations and borne out by recollections of old inhabitants, is that a low mound (27) lying outside the orchard to the east, and not far removed from the actual Number 20, is the mound described in Moorehead's report. There can be no error in our identification of Mound Number 20, since Moorehead accepts its location as shown on the Squier and Davis map, and so numbers it on his own; however, he makes no mention, as such, of the mound above referred

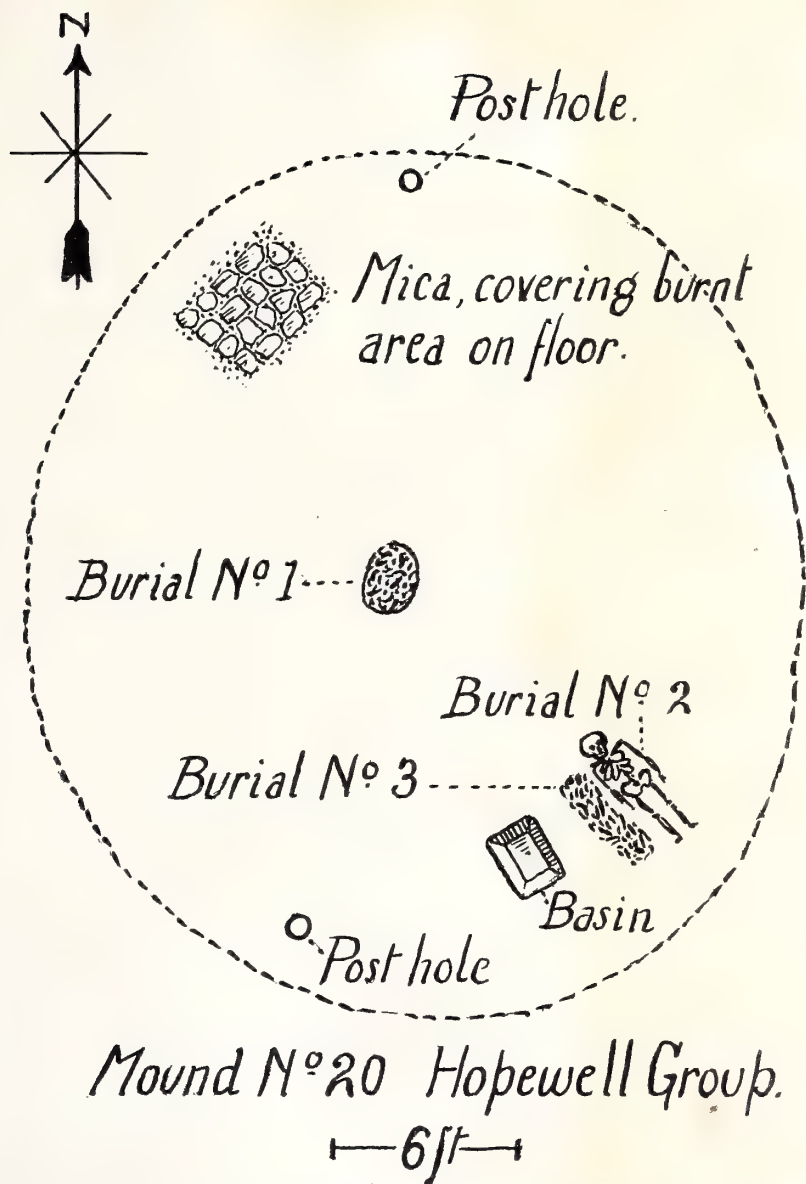


FIG. 16. Floor Plan of Mound Number 20.

to as Number 27 which, as will be noted on the present map, is in close proximity to Number 20.

The recent examination showed Mound Number 20 to be approximately 25 feet in diameter, with a height at center of 20 inches. It yielded three burials—two of which were cremated—and a small rectangular



FIG. 17. Cremated Burial Number 1, of Mound 20.

basin, in addition to a burned area some four feet across, upon which were strewn small sheets and fragments of mica (Fig. 16).

Burial Number 1 occupied approximately the center of the mound, and consisted of the usual amount of coarsely cremated skeletal remains (Fig. 17) resting upon an elevated earthen surface about three inches higher than the surrounding floor. Above and around the burial was a conical covering of stones, with a lat-

eral extent of 5 feet. With the remains were found two copper ear-spoons, and an unusual copper object (Fig. 117) in the form of conjoined tubes, each of which encloses a tubular bone.

Burial Number 2 was that of an uncremated elderly adult, rather badly decomposed. It lay extended upon the back, head to the north-east. It was unaccompanied by artifacts.

Burial Number 3 comprised the cremated remains of an adult, the charred bones being strewn along the right side of Burial 2, reaching from neck to knee.

The Basin of this mound lay to the south-east, parallel with Burials 2 and 3. It measured 17 inches by 22 inches, and was well made and sharply outlined. The location of the mica sheets was well out toward the north-west margin of the mound.

MOUNDS 21 AND 22

These were two very small mounds, located at north center of the large enclosure. They were hardly noticeable except when the surface was freshly plowed. Examination showed that cultivation had extended to and below their base levels and had completely obliterated any burials which they may have contained.

MOUND NUMBER 23

With the exception of Mound Number 25, this was the largest tumulus of the Hopewell Group. Its dimensions at the time of Moorehead's examination are given as 150 feet long and from 10 to 12 feet high. Its width, as nearly as could be determined by the present Survey, was a trifle less than 55 feet, and the height had been reduced to less than three

feet. Tests showed that with the exception of the western one-third, the mound had been pretty thoroughly examined by the former survey and, the field being in corn, the final examination was confined to this unexplored portion. Beginning at the western end, exploration was carried forward the entire width of the mound for a distance of 50 feet. At 40 feet in, the examination came upon the disturbed area. The undisturbed portion of the mound was composed of gravelly loam until a primary mound, which lay mostly within the disturbed area, was reached. This interior mound was composed of highly colored mottled earths, perhaps the most striking seen in any mound of the group. The floor or base level throughout was well defined, was covered with sand, and bore scattering post-molds. Two burials only were encountered by our Survey — the western end of the tumulus being almost destitute of graves.

Burial Number 1, located near the north margin some 30 feet in from the west end, was a cremation, with which were placed a pair of copper ear ornaments and a finely preserved container, made from an ocean shell. Three large flat stones had been set up around the burial.

Burial Number 2 contained the uncremated skeleton of a middle-aged individual — the smallest adult found in the entire group. Although the skeleton was poorly preserved, precluding exact measurement, it was evident that it represented a person of less than 5 feet in height. This burial lay within the primary mound, the greater portion of which had been examined by Moorehead. The body had been placed upon a bed of

bark and was surrounded by small timbers. With it were found a copper ear-spool in each hand; a long flat pierced bodkin or needle, of bone, and a portion of a rounded bone awl, at the left femur; a finely fashioned flint-flake knife at the head and a similar specimen at the left hand.

Around the margin of Mound 23 was the typical wall of stones and gravel, while throughout the body of the structure there extended two or more ceremonial strata of sand and fine gravel.

More than 50 burials and two basins were discovered by Moorehead during his examination of this mound. A number of these burials — perhaps 10 or 12 — apparently were of an intrusive nature. A number of interesting specimens accompanied the burials, among which were some unusual examples of human jaws cut and perforated for ornaments or trophies; several pipes, and many copper plates, pearl beads, and so forth. The most striking finds of the mound, however, were a copper spud, 12 inches long and weighing 17 pounds (Fig. 47) and a unique dish or bowl, of white limestone, 14 inches in diameter and weighing 12 pounds (Fig. 56).

MOUND NUMBER 24

In his report Moorehead describes the examination of Mound 24, and appends a floor plan thereof, but fails to show its location on his map. The mound was identified, however, through the finding in an unrecorded mound of the disturbed graves as shown on his floor plan. It is situated a short distance north-west of Mound 3, with which and Number 2 it forms a triangle. It is so located on our map.

Our Survey found this mound to be 50 feet in diameter and 30 inches in height. It was composed uniformly of a clay loam, and rested upon a distinct floor made by plastering over the original surface two inches of black muck or marl, presumably from one of the nearby spring runs.

It was found that the southern one-half of this mound had been but slightly disturbed and examination thereof revealed a small finely made crematory basin measuring 22 inches by 28 inches; three typical cremated burials, with one of which was a copper ear-spool and sheets of mica; and two additional burials — one of which was cremated — which appear to have comprised parts of the skeletal remains of one and the same individual. The uncremated remains consisted entirely of the lower portion of the skeleton, from the hips downward, in place and undisturbed; while at a distance of 3 feet lay the cremated burial, only partly consumed and consisting entirely of bones of the skull and upper parts of the body. Comparison of the remains in the two deposits indicates that they pertain to the same person.

Moorehead's examination of this mound revealed several burials, with one of which were placed a trophy skull and various artifacts.

MOUND NUMBER 25

Mound Number 25, formerly known as the "Effigy Mound" is by far the largest and the most important of the Hopewell group. Its original dimensions, according to Squier and Davis, were 500 feet long, 180 feet wide and 33 feet high. At the time of Moorehead's examination the maximum height of the mound was 23 feet, its length 550 feet and its width 220 feet. His estimate of the original area covered by the mound is 400 feet by 160 feet.

Divergence of opinion as to the lateral extent of a mound is inevitable, since no two persons would agree exactly as to where its margins terminate. Obviously, the external dimensions and extent of the structure are unimportant, except in so far as they may furnish clues as to its original form. Internal dimensions, or extent of floor space, however, generally are unchanged and available through complete examination, and in the case of Mound 25 these were definitely determined by our Survey.

Mound Number 25 (Fig. 18) was found to cover an elliptical floor surface approximately 470 feet long and 130 feet maximum width. This prepared floor level was enclosed, corral-like, by a ridge or circumvallation composed of stones and coarse gravel, (Figs. 19 and 20) varying from 18 inches to 3 feet in height and having a lateral extent of from 10 to 16 feet. The interior aspect of this encircling wall was as abrupt as practical construction would permit, while the outer descent, from its crest to the surface level, was an easy decline representing at least two-thirds of the total width of the wall.

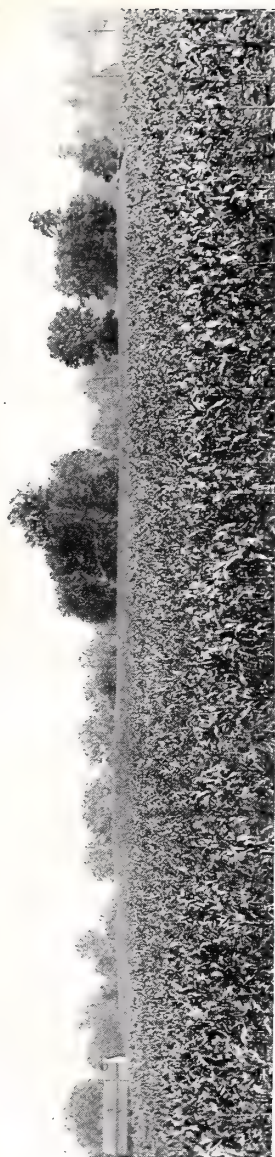


FIG. 18. View of Mound Number 25, Taken from the Site of Mound Number 2. The Great Mound, Seen above the Corn, extends almost the length of the Cut.



FIG. 19. First Cut in Mound 25, West end. Showing the Stone Wall.

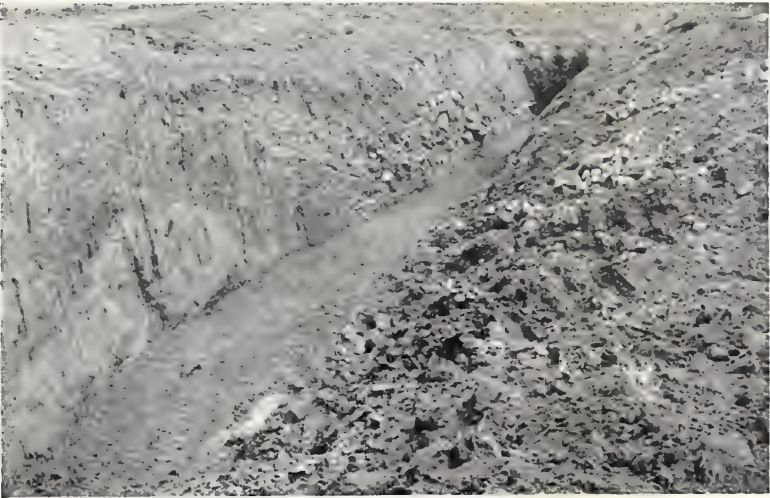


FIG. 20. Cut in Mound 25, 50 feet in from the West, showing Section of Wall or Circumvallation of Stones and Earth.

Upon this slope, at several points, were evidences of the activities of its builders. A definite surface was noted, upon which were the remains of fires, accompanied by considerable charred matter. This was particularly true of the western end of the mound, where considerable quantities of quartz crystal fragments, chips of flint and obsidian, and so forth, were strewn about.

Although our examination disclosed 95 feet of undisturbed floor intervening between the extreme western end of the mound and Moorehead's westernmost cut (No. 4), the sole result was the finding of two post-molds and a small fire-place. As in Mound Number 23 — the next larger of the group — the westernmost one-fourth of the structure was devoid of burials. A carefully prepared floor level obtained throughout this sterile section, but there were no primary or interior mounds, in which it later developed most burials of the tumulus occurred.

The location and extent of Moorehead's westernmost cut is shown on the accompanying floor plan (Fig. 21). Of this section his report (p. 113) says:

"Section 4. Skeleton 262 was found only 18 inches below the surface. A large stone celt lay near the neck. It is highly probable that it was an intrusive burial. Skeleton 263, that of a child, was found near the surface on the north side. Skeleton 276 was found on the base line. There were no objects with it. The floor of this section presented the same appearance as that of sections 2 and 3, being burned hard, but no platforms surrounded by trenches were found."

From this description, it appears that Section 4 yielded to the former survey a single burial attributable to the builders of the mound. However, as will be noted on the floor plan, a total of eight additional burials,

three of which were rich in artifacts, were discovered by the present Survey in this disturbed section. Three of these lay just outside the southern limit of the old cut, while the five others lay in close proximity beneath a stratum of hard gravel slightly more than one foot above the floor. It is evident that this cement-like covering was mistaken for the floor, a circumstance which, under the handicap attending the work, is not surprising.

Throughout our examination photographs and drawings of the wall of the mound, corresponding to the various cuts, were made and careful measurements were placed upon the field map. The cut at the 100-foot line (Fig. 22) shows the entire wall across the body of the mound; the margins of the old cut where it intercepted the floor level and passed upwards, the markings of the undisturbed portions at either end being in strong contrast to the mixed homogeneous soil of the central disturbed portion; the cuts through the stone wall at either end, with their characteristic overlying strata of gravel; and the clean original outer slopes of the mound.

The position, orientation and location of all burials are shown on the accompanying floor plan; and in order to avoid tiresome details of minor importance, only those burials of unusual interest will be described in detail.

Burials 1 and 2, adults, lay $4\frac{1}{2}$ feet above the floor and $2\frac{1}{2}$ feet below the present surface of the mound. They, with Number 3, were the only burials disclosed which were not upon the base line. Both 1 and 2 had been placed upon a bed of gravel, presumably at the same time. With Number 1 were several hundred pearl

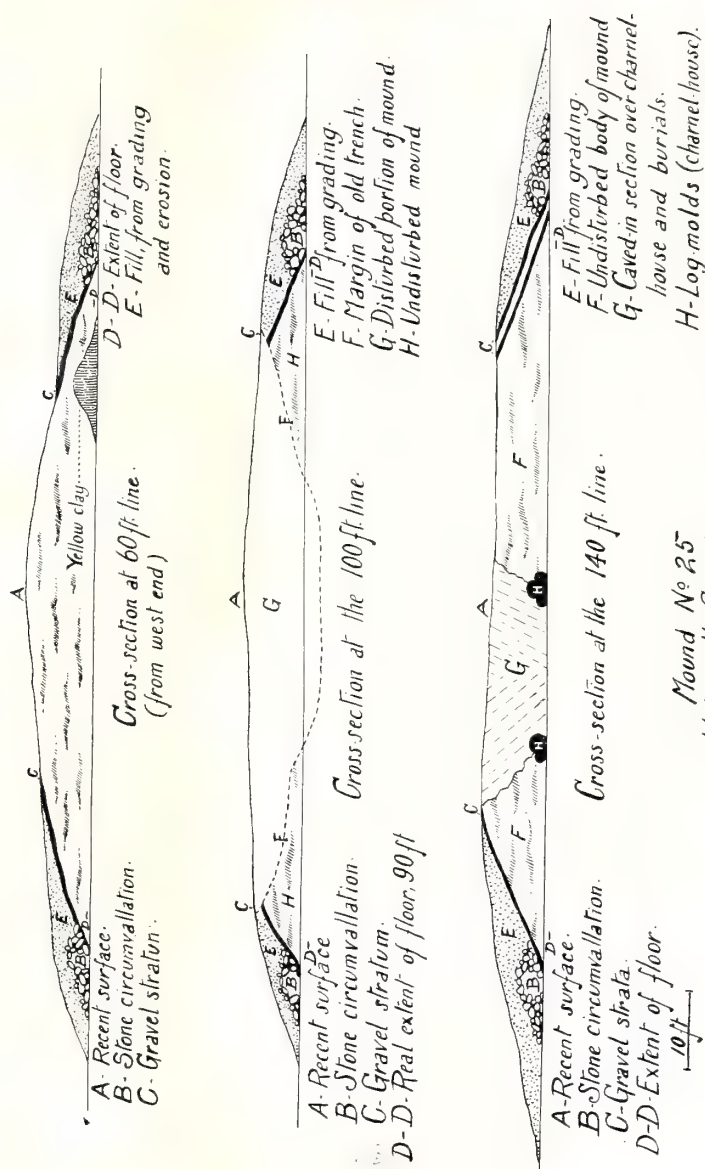


FIG. 22. Cross Sections through Mound 25, at the 60-foot, the 100-foot and the 140-foot Lines, Advancing from the West.

beads, at the neck; 2 copper ear-spools under the head; and six large bear canines, three of which were cut or sawed into two parts. Burial 2 was without artifacts. Both skeletons were badly deteriorated.

Burial Number 3 lay 6 feet above the floor, upon a bed of gravel; adult, badly deteriorated. Stones, both large and small, were placed at the head and feet; on the chest was a large saucer-shaped gorget of marine shell, and on the forearms numerous beads of small univalve shells. None of the above burials was intrusive.

Burial Number 4, cremated, was of unusual interest. The charred bones, those of a massive adult, lay toward the north-west corner of a raised earthen platform measuring 7 feet by $4\frac{1}{2}$ feet. At the south end of the platform lay two shield-shaped ornaments of mica; four thin copper figures resembling in form a modern tobacco pipe; and an elaborate curved head-plate of copper, decorated with cut-out conventional designs.

Burial Number 5 comprised portions of a skeleton which had been disturbed by the plow. With it was a stone celt. Possibly intrusive.

Burial 6 and 7—These burials, (Fig. 23) occupying a common grave, were richly supplied with artifacts and in several respects exhibited features probably unique in Ohio mound exploration. They lay extended upon the back, heads to the south-west, with a space of three feet intervening between them. The skeletons lay upon a heavy bed of bark, placed directly upon the floor. The skeleton of Number 6 (to the south) was that of a young male of about 5 feet 11 inches in height, and of striking massiveness and muscularity. At the head,

neck, wrists and knees were hundreds of pearl beads, ranging from very small to exceedingly large fine specimens. Along with these were more than 50 button-shaped ornaments, made variously from stone, clay and wood, with copper coverings; at each ear, a copper ear



FIG. 23. Burials 6 and 7, of Mound 25, Richly Supplied with Artifacts and each Bearing an Artificial Nose of Copper.

ornament; at the neck six extremely large bear canines, measuring almost 4 inches in length, cleverly cut into two or more sections and set with large pearls; beneath the head, hips and knees, large copper plates, more than one foot in length, upon which were preserved cloth and fabric; lying across each collar bone, from points

beneath the ears to about the lower extremity of the breast-bone, two unique copper objects, skewer-shaped, $\frac{3}{8}$ inch in diameter and about one foot in length. The last-named were cord-wrapped and apparently had served as supports or ornaments for hair braids.

Skeleton Number 7 was that of a young adult of medium height and build, apparently a female, and was



FIG. 24. The Skulls of Burials 6 and 7, Mound 25, Supplied with Copper Noses.

even more elaborately decorated than its companion. Along the left side, upon strips of bark and placed in a straight row from head to foot, were more than 50 copper ear ornaments of the usual form; encircling the entire skeleton was a line of pearl beads and copper-covered buttons; at the head, neck, knees and hips, hundreds of pearl beads; under the head, hips and knees,

copper plates; in each hand two copper bracelets of unusual form; and at the neck, as in the companion burial, two copper skewers similar to but not quite as long as those with Skeleton Number 6.

The most striking feature, however, of these companion burials, is that the skull of each was supplied with an artificial nose of copper. This (Fig. 24) was effected by inserting into the nostrils funnel-shaped copper tubes of about $2\frac{1}{2}$ inches in length, having the outer openings made to correspond to the nostril apertures. These copper noses were firmly imbedded in place in both skulls, and afford striking imitations of the original features. The copper noses doubtless were post-mortem insertions, and if one wished to indulge in surmise it is easily conceivable that the Hopewell builders, obviously familiar with human anatomy and thus realizing that the nasal appendage quickly decomposes after death, supplied this young couple with imperishable noses, that they might not pass into the beyond lacking these useful and ornamental facial features.

Number 8, the remaining burial of this particular group, was that of a cremated individual, without artifacts.

The puzzling situation resulting from the finding of this group of burials at practically the center of the old cut was difficult to clear up. What otherwise would have been easily apparent was complicated by the irregular disturbance of the former examination in this portion of the mound. As nearly as could be determined, however, the group of five burials, in close proximity and occupying a space not more than 15 feet across, had been covered by a low mound not exceeding

one foot in height which, in turn, had received a thin covering of clay and gravel. This covering stratum had become highly indurated and closely resembled the floor proper of the mound, for which it apparently was mistaken. Unlike other interior mounds of the structure, that covering this westernmost group of burials lacked the definite circumferential line of post-molds as well as the log structures enclosing individual graves. There were, indeed, large outlying log-molds, suggesting a charnel house for the several burials, but these had been mostly obliterated by the former examination. In the absence of individual log structures there was nothing to indicate the presence of the several graves until their contents were disclosed through removal of the hard-packed earth above them.

Continuation of our examination disclosed, 175 feet in, the margin of what proved to be the most important of several primary or interior mounds of the main structure. Moorehead's westernmost cut had touched upon its western edge (see floor plan), intercepting a single burial; his Section 3 had cut through its center and his Section 6 corresponded to its eastern end. This great interior mound was 135 feet from east to west and 75 feet in width.

Burials 9 and 10, the first discovered in the large interior mound, were uncremated adults, with only minor artifacts accompanying them. The grave of Number 10, however, was an interesting example of the timber structures characteristic of Hopewell burials. It measured $7\frac{1}{2}$ feet long by $3\frac{1}{2}$ feet wide and was composed of exceptionally large timbers, some of which were above 6 inches in diameter. At each corner there

had been set a post, for support of the structure, while exteriorly there had been driven stakes to hold the three tiers of logs in place.

At the point shown on the floor plan there was found an extensive log-mold, the timber of which had been burned. In the resulting ashes were found numerous beads, bear canines, fragments of mica and so forth.

Burial Number 11 comprised the skeleton of a middle-aged individual 5 feet 8 inches in height. The raised earthen platform on which it lay was enclosed by a pretentious log structure, two logs deep, which measured 10 feet long by 6 feet wide. The logs were held in place by small posts at the corners and by stakes and large stones at the ends and sides exteriorly. While most burials of the mound had coverings of bark on which the body was laid, in this burial (Figs. 25-26) the platform had a covering of fine gravel to a depth of one inch. At the left center of the platform was a large ocean shell container; at the lower left were eight large bone awls made from leg-bones of the deer, sticking upright in the platform; in the left hand were two copper ear ornaments, and in the right hand six incisor teeth of the bear, perforated for beads. At each ear was a copper ear-spool, and at the neck and wrists numerous pearl beads. At right center of the platform were two large copper breast-plates while at the neck were four very large canines, two of them cut with a mitred joint and set with pearls.

At the top of the skull lay an elaborate head-dress which consisted primarily of a rectangular curved head-plate, with large oval copper wings on either side. This bird-like head-dress had been assembled on a saucer-



FIG. 25. Face of the Cut in Mound 25, at the 200-foot line showing, from left to right, post-holes, Burial 11, Stone Pavement and Burial 12.



FIG. 26. Burial No. 11, Mound 25, with its Copper Head-dress.

shaped wooden base, parts of which were fairly well preserved. Along the margins of the wings lay, in place, small designs cut from mica, which evidently had been



FIG. 27. A Basketful of Earth, with its Carrying Basket, found in the body of the Mound near Burial 11, Mound 25, where it had been Dropped or Deposited in the Process of Building the Mound.

fastened to them for ornamentation. The remains of a bonnet-like appendage of woven fabric indicated the original form of the complete head-dress, and to this

fabric had been sewed large pearl beads, bear claws, bird feathers and the head of a small raptorial, presumably a hawk. This remarkable head-dress, which was in unexpectedly good condition, is shown in Fig. 106.

An interesting detail of the process of building the mound was the finding, adjacent to Burial Number 11, of a "load" of component earth in its carrying basket. Evidently the load of earth, consisting of about 30 pounds of light-colored clay, had been added to the thousands of others composing the great structure, "basket-and-all". The clods of earth surrounding this load of earth, with their imprint of the basket weave, were carefully turned back, and together with the load itself were photographed, as shown in Fig. 27. The material of the receptacle, of which only the imprint remained, resembles more closely a coarse angularly woven fabric rather than true basketry.

Burial Number 12 — A good illustration of the caving down of earth above a grave following the decay of the enclosing timber structure is shown in this burial (Fig. 28). The arch-like opening in this case was 7 feet long and $4\frac{1}{2}$ feet wide, extending about 6 feet above the floor level. It was not unusual to find this loose arched condition extending practically to the top of the mound, in some instances more than 10 feet above the base.

With this burial — the skeleton of a medium sized adult in early middle life — were found, at the neck, a large number of seed pearl beads; copper plates beneath the right shoulder and the knees; and a short copper tube, enclosing slender reeds, in the left hand.

Burial Number 13 comprised the skeleton of a



FIG. 28. Arched Opening Above Burial 12, Mound 25, Resulting from Falling in of the Log Structure Enclosing the Skeleton.

young adult of less than average height. It was the only burial disclosed by our Survey in which the body had been laid upon a bed of charcoal, carefully spread over a bed of gravel covering the burial platform. With this burial, at each hand, was a large copper helmet-like curved head-plate, while at the wrists were a few pearl beads.

RAP. FINDS OF FORMER SURVEY

With the continuation eastward of the work of exploration, the second of five trenches or cuts made by the former survey was encountered. The form, size and location of this and others of the old cuts are shown on the accompanying floor-plan of the mound. It was in this cut, corresponding closely to the center of the great interior primary mound, that the Moorehead survey made its most impressive finds. These consisted of the noted deposit of copper designs and figures, placed apparently as a votive offering within the body of the mound; a remarkable offering of copper implements, placed with a double burial on the floor of the structure; and a "cache" of miscellaneous objects found within a so-called altar, or basin.

The location of the deposit of copper designs, since it lay well above the floor-line, could only be approximated by our Survey from the presence in the disturbed earth of numerous fragments and scales of copper. Of this interesting find Moorehead says (p. 109):

"Near the center of the section, four feet from the base line, were found 120 pieces of sheet copper. They were all laid flat, and occupied a space three feet long and two feet wide, with layers of bark above and below. There were no skeletal remains connected with this deposit, nor was any altar found near it.
* * * Many of the plates were worked into various patterns. Very few of them were of forms known to exist in Ohio, the

greater part of the designs being unique. The field list is as follows: A long mass of copper, covered with wood on one side, squares and five other traceable things on the reverse; 18 single copper rings, two of which are small; double copper rings, one set of three and one set of two; five saucer-shaped disks; saw-shaped design, arrowhead and other unknown things massed together; one combination design of circles and bars; smaller mass of copper, wheels, etc.; two fragmentary fish and one whole fish, resembling the red-horse; two diamond-shaped stencils of copper; three long copper plates, one of them perforated; two swastika crosses; four copper spool-shaped ornaments; two with four holes in each; one mass of ten little copper circles; four comb-shaped or bear effigies; two spoon-shaped pieces of copper; 40 pieces of copper, square, circles, etc., many fragmentary; 11 pieces showing semi-circles, straight edges, squares, etc.; one small cross with two arms."

The more important of the above types are shown, much reduced in size, in Figures 151 and 152. These cuts are taken from outline drawings of the specimens, missing portions of which are indicated by dotted lines. Duplicate specimens of these copper figures, in so far as they were available, were secured by the Museum in its exchange with the Field Museum, while replicas were made of specimens of which no duplicates were to be had.

A remarkable series of designs in copper, both in repoussé and scroll work, were taken from the Mound City group.⁹

The earthen platform on which the double burial and its accompanying tribute of copper axes and plates lay was readily located by the Survey. Portions of skeletal remains, fragments of copper and a very small copper axe less than two inches long (Fig. 47) remained to mark the location of the remarkable find removed by

⁹ Mills, William C., *Exploration of the Mound City Group*, Certain Mounds and Village Sites in Ohio, Vol. 3, Part 4.

the former survey. Moorehead's description of this burial (p. 110) follows:

"Two skeletons, Nos. 260 and 261, lay together near the base line, with the heads west. The mass of material deposited with them exceeds that associated with any other burial so far discovered in the United States. The objects were laid so as to form a rectangle 7 feet long and 5 feet wide, and were frequently so closely spaced as to overlap one another. The most remarkable find was a copper celt 22 inches long, which weighed 38 pounds. In spite of its size it was very symmetrical.

The objects covering the two skeletons were as follows: Sixty-six copper celts, ranging in length from $1\frac{1}{2}$ to $22\frac{1}{2}$ inches; one stone celt 11 inches long; 23 copper plates, mostly fragmentary, and a great number of pieces; one very large jaw; a curious copper head ornament; a broken shell; some very fine pearls, pearl and shell beads and teeth; carved bones and bone fragments; effigies; meteoric iron, partly worked copper, etc.; and colored earth."

The large copper celt, together with the small one found by our Survey, illustrated in Fig. 47, afford a good comparison of the great range in size of the implements of this offering.

Of the basin found in this section, and its contents, Moorehead says (p. 113):

"It was evident that a quantity of wood had first been placed in the basin of the altar, and that the earth had been heaped over it and the objects, while it was still burning. Thus, although the contents of the altar were badly charred and burned, not all the objects had been destroyed. The objects had been heaped in the cavity of the altar without any regularity of position and included mica ornaments, spool-shaped copper ornaments, copper balls, many other copper objects, large beads, bear's and panther's teeth, carved bones, several effigies carved out of stone, stone tablets, slate ornaments, beautiful stone and terra-cotta rings, quartz crystals worked in various forms, flint knives, and cloth."

The location of this basin was readily apparent, but the basin itself either had been removed or destroyed.

Two additional burials of this Section, removed by the Moorehead survey, were of exceptional interest. Of his burial Number 278, he says (p. 111):

"The remarkable incised portion of a human femur * * * was taken from beside the head of this skeleton. A pair of shell ear pendants was found near the neck. It is interesting to note that a similar ornament is represented in the lobe of the ear of the carved human figure illustrated in (see Fig. 137). A number of small pearl beads, two copper ear ornaments of the usual form, several perforated bear's teeth, two of which were inlaid with pearls, and (a) large, finely executed imitation bear's tooth of antler were also obtained with this skeleton. There was also a remarkable human effigy of cannel coal.

"The following objects were found with (Burial 281): Three copper plates, one of which lay beneath the hips, another below the shoulders and a third under the head, two of these being the largest found; a copper helmet shaped head-dress; copper ear ornaments; a clay hemisphere covered with metal; a number of copper beads, the first found in this mound; a finely carved section of human femur (See Fig. 149) a portion of a delicately wrought ornament of tortoise shell. * * * A bird effigy and an otter or beaver, both carved in bone, were found by the side of the head."

The effigy referred to as an otter or beaver, is illustrated in Fig. 135. It appears to represent the otter with a captured shoveller duck, and is one of the most striking of the mound carvings. It is of the hollow effigy class, and the outline of the bird is indicated on the under part and within the cavity by incised lines.

Emerging from this disturbed section of the former survey, there were disclosed in succession Burials 14 to 22.

Burial Number 14 was that of a cremated body, occupying a slightly raised surface over which a small primary mound and a covering of stones and coarse gravel had been erected. It was supplied with a few shell beads.

Burial Number 15, the skeleton of a young adult (Fig. 29), badly deteriorated, was placed upon the usual slightly elevated earthen platform within its log enclosure. It was accompanied by a single flint-flake knife.

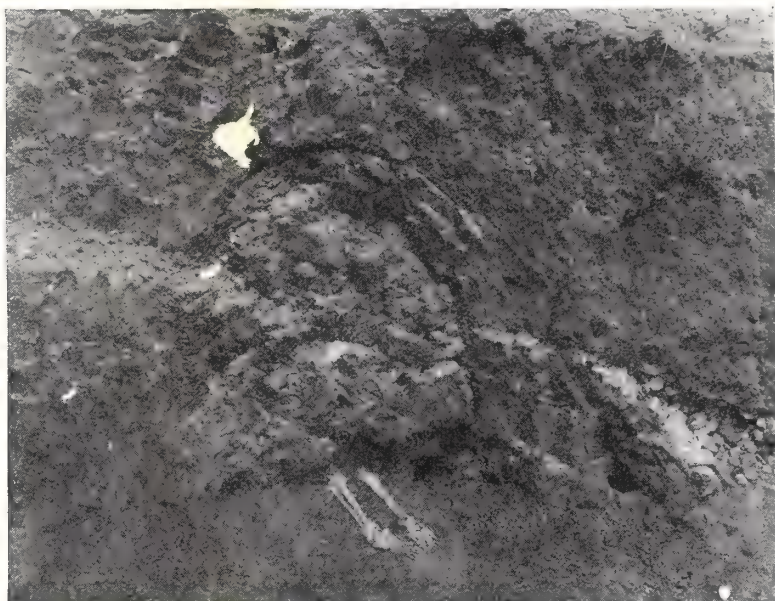


FIG. 29. Burial 15, Mound 25; the Lower Leg Bones only Exposed.

Burial Number 16 contained the skeleton of a very young adult, of medium height. A few shell beads and three flake knives accompanied the altogether typical burial.

Burial Number 17 was a typical cremated burial, with log enclosure. It was accompanied by a number of button-shaped pierced beads of mother-of-pearl, and two copper ear-spools.

Burials 18, 19 and 20—These were typical cremated burials, without special features. With Number 18 was found a small flare-bitted copper axe, while Number 20 was accompanied by two copper pendants of the size and form of tea-spoon bowls, and a notched flint spear-point, $6\frac{1}{2}$ inches long, made from blue-gray translucent Flint Ridge material.

Burial Number 21 comprised the badly decomposed skeleton of an adult, lying extended upon the back, with the head to the east. Preparation of the grave was entirely typical, except that the timbers composing the log structure were unusually large. At the chest were four bear canines, drilled for attachment and pearl-set, two of them being cut or sawed into two parts. At the right side of the head lay an unusual platform pipe. This specimen, shown as Fig. 71, is small and unusually delicate, the material being a glossy greenish-black steatite.

Burial Number 22—This was a double burial, (Fig. 30) the skeletons occupying an earthen platform hardly wider than that usually prepared for a single individual, and the log-molds enclosing it being much smaller than in the typical grave. The skeletal remains were those of a young male, of medium size and, at his right side, shoulders touching, the skeleton of a young female. They had been deposited upon a bed of bark with a similar covering above.

The skeleton of the female was almost barren of adornment, nothing more than a few pearl beads at the neck and wrists being found. However, an elongated rectangular strip of mica, cut into form, lay across the left humerus of the female and the right humerus of

the male, apparently so placed as a connecting tie between the two.

The male skeleton was more richly endowed. At the neck and left wrist were hundreds of pearl and shell beads; at the neck, four grizzly canines, set with pearls, two of them interestingly repaired by means of bone plugs or dowels; at the left wrist were 22 split bear teeth,



FIG. 30. Burial Number 22, Mound 25, with which were Found many Interesting Specimens.

perforated with three holes each; at the left hand, a beautifully wrought spear-point, 9 inches long and exceedingly thin and symmetrical, made from a translucent amber-colored chalcedony. At the pelvis was a rectangular copper plate and at the right side of the chest a similar plate; at the ears were copper ear-spools; at the right hand, two beaver incisors and two cut jaws of the wolf; at the right side of the head, between the two skulls, was a curved copper head-plate, helmet-

shaped; and between the knees, a highly polished celt of cannel-coal, 6 inches in length.

Burial Number 23, as will be noted on the floor-plan of the mound, lay outside the large primary mound, occupying a small separate post-enclosed compartment to itself. In this burial (Fig. 31) the usual log struc-



FIG. 31. Burial Number 23, Mound 25: one Skeleton Wears a large Copper Crescent.

ture immediately enclosing the remains was lacking, and instead of the raised platform the skeletons occupied a rectangular basin, 8 inches in depth. The burial was a double one, but the skeletal remains were so badly deteriorated that it was impossible to determine the sex of either of the two adults represented.

The skeleton at the north side of the grave had nothing more than a flake knife placed with it. That to the

south had at the neck four pearl-set canines of the black bear, a pair of copper ear-spools and a few pearl beads; and on the chest a crescent-shaped copper ornament, 12 inches in length. This specimen, badly deteriorated, is in the form of the conventional "new moon" and is one of only two found in the Hopewell group by the present survey. A fine specimen of this type was taken from the Scip Mound.¹⁰

Burial Number 24 comprised the uncremated remains of a medium-sized male of middle age, in an advanced stage of deterioration. At the north-east corner of the grave was a large post-mold and at intervals around the enclosing log-molds were stake-holes, the stakes having been driven in around the log structure to hold it in place. This feature is quite common in connection with the log enclosures of the Hopewell mounds, but was particularly marked in this instance. A typical copper plate lay at the top of the skull, with large pearl beads at the perforations, and a similar plate lay under the dorsal vertebrae, just above the pelvis. An interesting feature of this plate is the fine imprint on its upper face of an elaborate garment or robe, the lower portion being of woven fabric and the upper part of fur. At each ear of the skeleton was a copper spool while at the neck and wrists were numerous pearl beads. At the right hand were two cut jaws of the mountain lion and at the neck were four canines of the grizzly bear, one of them plain, one set with a large pearl, while a third had the tip sawed off and was ingeniously mended with bone dowels. The fourth specimen was

¹⁰ Mills, William C., *The Scip Mound*, Certain Mounds and Village Sites in Ohio, Vol. II, part 1.

in five pieces as a result of the characteristic checking and splitting and had been ingenious \checkmark reassembled and restored by means of bone dowel-pins passing through the detached portions into the body of the tooth. At the feet of the skeleton lay a large container made from a fulgur shell.



FIG. 32. Burial Number 25, of Mound 25, on the Chest of which was Found an Ornament made from the Lower Jaw of the Barracuda

Burial Number 25—This burial contained the skeleton of a young male of 5 feet 9 inches in height, moderately well preserved. In this typical burial the bark bed and covering of bark were strongly marked, the covering having been laid transversely across the body. At the neck and wrists were numerous pearl beads; at each ear, a copper spool to which large pearl beads had been attached; at the right side of the head

a rectangular tablet of tortoise-shell, a small mica ornament and a short bone spatula.

Upon the chest of the skeleton (Fig. 32) there was found an unusual pendant. This was made from the lower jaw of the barracuda, a perforation through the anterior end serving for suspension from the neck. The specimen (Fig. 90) has, in addition to the canine, a total of 26 teeth.

Burials 28 and 29 were typical cremated burials without special significance. With number 29 was found a large sheet of mica.

Burials 26, 27, 30, 31 and 32: This group of five burials, all of which were cremated, represented a distinct departure from conditions obtaining in Mound Number 25 up to the time of their disclosure. They occupied a distinct small primary mound to the south-east of the large primary in which the preceding burials were found, and presented features strikingly different from those attending the typical burials of the structure.

In comparison with others of the main structure the primary mound covering this group of burials appeared almost archaic in character.

With the exception of Burial Number 26, the graves within it showed but little preparation, only slight indications of small timbers being in evidence and the cremated remains being unaccompanied by artifacts.

Burial Number 26 occupied a rectangular basin-like grave, dug into the floor to a depth of 10 inches and measuring $4\frac{1}{2}$ feet long by 4 feet wide. Bordering the sides of the grave, on the floor line, were a number of large stones — 15 in all. These stones apparently had

been selected for their attractive appearance, they being mainly mica schists with inclusions of small iron garnets, and handsome granites. The stones had been subjected to heat and were much decomposed. With the cremated remains were two copper ear-spools.

At the western margin of this primary mound, corresponding closely to the location of burials 26 and 27, there were a number of post-molds.

ADDITIONAL PREVIOUS FINDS

It will be noted on the floor-plan that with the removal of the burials above described, the Survey was passing through another disturbed section (Number 6) of the former survey. Two features of this disturbed section deserve mention. Of his burials 289 and 290 — two of four disclosed by Moorehead's examination in this cut — he says (p. 114):

"Bowlders to a thickness of 14 or 15 inches had been laid over the bodies. At the heads, bowlders the size of a man's fist had been arranged in arch, sheltering the skulls, which were fairly well preserved. A peculiar substance similar to resin or gum was found upon the shoulder blades of one skeleton."

In digging through the disturbed earth on the site of this double burial, our Survey found a specimen made from the resin or gum above referred to. This was in the form of a pear-shaped pendant, with a double perforation through the top or smaller end, and measures $1\frac{3}{4}$ inches long by $1\frac{1}{2}$ inches in diameter. It is shown as Fig. 113.

The second of two basins found by the Moorehead survey was situated in this section. Of it (p. 114) he says:

"The objects found in it had been heaped above the fire, as in the altar previously described. It was somewhat larger than the

latter and included more objects. Most of the finds were of the same character, but in addition it contained obsidian and some fine pipes."

From his Section Number 2, separated by only a few feet of undisturbed mound from the old Section 6, Moorehead removed a total of 18 burials, the most interesting of which was his Burial Number 248. Of this he says (p. 107):

"The skeleton, which was badly decayed, was 5 feet, 11 inches long. * * * At the right shoulder lay a large platform pipe and a beautiful agate spear-head. A copper plate lay on the breast, and another on the abdomen, while a third lay under the hips. These plates, when lifted, were found not only to have preserved cloth and sinews, but portions of the muscles of the individual. Cut, sawed and split bears' teeth covered the chest and abdomen, and several spool-shaped ornaments and buttons of copper were found among the ribs. The body had apparently been dressed in a cloth garment, extending from the neck to the knees, upon which had been sewn several thousand beads, some of pearl and others of shell. Upon the skirt of the garment had been sewn some of the largest and most beautiful pearl beads found in any of the mounds, together with bears' teeth, etc.

"The head had been decorated with a remarkable head-dress of wood and copper. The mass of copper in the center was originally in the form of a semi-circle reaching from the lower jaw to the crown of the head. It had been crushed flat by the weight of the earth, but part of the original contour was still apparent. The antler-shaped ornaments were made of wood, encased in sheets of copper, one-sixteenth of an inch thick. They originally had four prongs of nearly equal length."

This remarkable burial is an illustration of the popularity with the Hopewell culture peoples of antlers as adjuncts of the head-dress. A head-dress found by Moorehead with his burial 260-261 bears the short budding or "velvet" antlers, while an elaborate engraving on bone of a human head, illustrated in his report shows the antlers attached to the head-dress. A remarkable

series of imitation antlers in copper was taken from Mound Number 13 of the Mound City group. (p. 366.)

In his Section 1, toward the east end of Mound 25, Moorehead found no burials.

The remaining burials found by the present Survey in Mound 25—numbers 33 to 47—lay within the easternmost of the several interior primary mounds or charnel-houses of the great structure. As will be noted on the floor plan, Section Number 6 of the former survey had impinged upon this primary mound and had removed therefrom a number of burials.

Burial Number 33—an uncremated adult—lay mostly within the old cut and with the exception of the bones of the lower legs had been removed. With the latter were found several bear claws and a number of univalve shell beads.

Burial Number 34—With this typical uncremated burial were found some of the more interesting of the many specimens secured from Mound 25. A feature of the burial was the size of the log structure enclosing it and of the individual logs employed. The dome-like aperture above the grave, resulting from the decay and falling down of the log structure, was strikingly large and bold, reaching almost to the top of the mound which at this point was ten feet in height. In the illustration (Fig. 33) it will be noted that the gravel strata of the primary mound have broken off and dropped down with the loose earth filling the cavity.

The skeleton was that of an adult, of middle life and of medium height, but the degree of deterioration was so great as to preclude determination of sex. At the

left of the head lay a trophy skull, of a middle-aged adult, badly crushed.

At the right hand of the skeleton lay an ornament fashioned from the lower jaw of the wild-cat; extend-



FIG. 33. Burial 34, of Mound 25, which Yielded Rare Ornaments of Mica.

ing across the pelvis, from wrist to wrist, were numerous split bear canines and many shell beads, both globular and barrel-shaped; at the left humerus and at the neck were several hundred beads of shell and pearl; on

the chest was a fine shield-shape copper plate; just above this plate, where it had been suspended from the neck, was an ornament made from the upper jaw of a human being in early adult life; at the neck were four cut and pearl-set bear canines and a dozen canines of very young bears, the posterior portions very thin and the tips ground off to expose the neural cavity, thus permitting them to be strung in a manner suggesting use as rattles. Between the skull proper and the trophy skull were four copper ear ornaments. At the right side of the head was a finely made ceremonial spear-point of mica, $8\frac{1}{2}$ inches long, and at the left side of the head two similar ones, measuring 8 inches in length. Above the skull lay a female human figure, cut from sheet mica, and measuring 13 inches in length. Like the copper human figures found at the Mound City group (p. 374) this specimen is headless. The mica spear-points are quite similar to that found in the Harness mound.¹¹

Burial Number 35 (Fig. 34) so closely adjoined Burial 34 that they might with propriety be considered together as a double burial; the platforms occupied by the remains, however, were separate. The grave was altogether similar to that of its companion burial. Unfortunately, the skeleton, representing a middle-aged adult of average size, was little more than streaks of dust, as was true of a trophy skull placed 15 inches to the left of the skull proper. At the right wrist of the skeleton lay a cut wild-cat jaw and some shell beads. About the neck and chest were several hundred pearl beads of every size and form; at the ears were copper

¹¹ Mills, William C., *Explorations of the Harness Mound*, Certain Mounds and Village Sites in Ohio, Vol. I, part 4.

spools, and on the chest a finely preserved copper plate, with large pearls at the perforations.

Beneath the hips of this skeleton lay a copper plate which measures $16\frac{1}{2}$ inches in length and 7 inches wide. This plate, it is believed, is the largest taken from an Ohio mound. At the neck were several pearl-set bear canines and two bear canines set into sockets of bone, the latter decorated with incised designs. At the top of the skull and scattered throughout the loosely caved earth above it were fragments of an elaborate copper ornament, presumably a head-dress. It was evident that the object had been placed on the log structure covering the body and that as the superincumbent earth dropped into the grave, following the decay of the logs, it had been dragged downward and broken into several parts. The specimen is illustrated in Figure 150.

Burial Number 36, cremated, and accompanied by two copper ear-spools, lay on a platform adjoining Burial 35, to the south.

Burial Number 37, cremated and without artifacts, occupied the southeast corner of the platform of Burial Number 35.

Burial 38, cremated and without artifacts, occupied a small carefully prepared platform 3 feet long and 22 inches wide, enclosed with logs.

Burial Number 39 (Fig. 34) was a cremated one, occupying a raised platform 3 feet 4 inches by 2 feet 3 inches in size, with log enclosure. This burial, as is true of many other cremated burials of the mound, was exactly similar in its preparation to graves containing uncremated skeletons, with the exception that its dimensions are less. With the burial was a sheet of mica, a



FIG. 34. A Cut in Mound 25, at the 333-foot line Sho-wing, left to right, Burial Number 29, Crematory Basin; Burials 37, 34 and 35.

copper breast-plate, four drilled bear canines and some flakes of flint.

Burial Number 40—This skeleton of an adult, 5 feet 7 inches in height, was badly deteriorated, despite the fact that the bark covering was so marked that at no point had the earth above it come in contact with the remains. At the side of the skull were a few large shell beads, and at the right hand the cut lower jaw of a mountain lion.

Burial Number 41—This triple burial—the only one of its kind found by this Survey in the Hopewell group—comprised three uncremated skeletons, placed side by side on an earthen platform measuring $6\frac{1}{2}$ feet long by $7\frac{1}{2}$ feet wide. As a result of the unusual size of the grave and the heavy timbers enclosing it, the caving of the earth above was unusually marked. As will be noted in the photograph (Fig. 34) this caving is noticeable to a height of 9 feet above the floor and to within 18 inches of the top of the mound.

Skeleton Number 1—to the south side of the grave—was that of a middle-aged individual, sex indeterminate, but apparently a male; height, based on femur measurement, approximately 5 feet 9 inches. This skeleton, as was true of others of the grave, was badly decomposed. Between the knees lay a cone of limestone; under the left side, a copper plate on which is preserved a woven fabric; at the hips were 14 imitations in bone of bear canines, finely made; at the neck, a pair of plain perforated bear canines together with two bear canines cut diagonally and set with pearls; a pendant made from the lower jaw of the barracuda, and shell and pearl

beads; and at the left foot a bone needle, 8 inches long, curved to correspond closely to the segment of a circle.

Skeleton Number 2 — the central one of the three — was that of a young adult of about 5 feet 8 inches in height. At each wrist were a number of perforated raccoon teeth; at the left arm, more than 25 bear claws; at the neck, pearl and shell beads; near the right shoulder, four flint-flake knives and three bone awls, one of the latter being very large, of circular section, and another made from the leg-bone of the deer.

Midway between the humeri of this skeleton and Number 1, and possibly belonging to the latter, was found an ornament or trophy made from the upper and the lower jaws of a human being of early adult life. Both jaws pertain to the same individual, and each has two or more perforations for suspension and fastening together.

A separate skull, large and finely developed, of a middle-aged individual, lay to the left of and somewhat above the central skeleton. A drilled perforation through the occiput showed this to be a trophy skull.

Skeleton Number 3 was that of an individual of middle life, apparently a female of approximately 5 feet 3 inches in height. At the right of the skull lay a large hollowed antler tine; at the neck, numerous shell beads; and at the left side of the skull a finely made ring, pulley-shaped, of black steatite, having eight perforations through the circumference.

Burial Number 42 demonstrated a somewhat different method of placing offerings or possessions with the dead from that usually followed. The skeleton was that of a young adult measuring 5 feet 10 inches in

height. Sex of the individual was indeterminate, owing to advanced decomposition. On an elevated surface of mixed charcoal and clay, at the top of the skull, there had been placed the following objects: numerous flakes and small pieces of sheet mica; several thin elongated marine bivalve shells; a few pearl beads; several copper-covered buttons; a fragment of a tortoise-shell ornament; and eight imitation bear canines, cut from mica. The objects covered approximately one square foot of surface and were elevated about 10 inches above the floor line.

Burial Number 43 was of decided interest, in that it contained a simple story, plainly told. Upon a carefully constructed earthen platform, enclosed within the usual log structure, there had been placed the intermingled cremated remains of an adult and a child. At each corner of the west end of the platform there reposed a container made from an ocean shell, one of average size and the other quite small. With the charred remains were two copper breast-plates, of the usual form; one of these was of average size, while the other was very small. A logical conclusion would be that this burial represented the cremated remains of a mother and her child. In addition to the shell container, and the copper plates, there was found with the burial a flint arrow-point and a finely preserved ornament made of tortoise-shell, rectangular in form with one end rounded, measuring 8 inches long by 2 inches wide.

Burial Number 44, a typical cremated burial, was accompanied by a single bear canine. Burial 46 was entirely similar and was without artifacts.

Burial Number 45 contained the skeleton of a male past middle life and of extremely massive build. At the neck were a number of shell beads, and at the top of the skull lay several bone needles and a scroll-like ornament of tortoise-shell. On the chest lay an ornament made from the lower jaw of the barracuda, drilled for suspension. Along the right side of the skeleton, extending from the elbow to the knee, were the cremated remains of an adult individual.

Burial Number 47, the last one to be removed from Mound 25, contained two uncremated skeletons, (Fig. 35) placed side by side in the usual manner. The burial to the south side of the platform was that of an adult, sex indeterminate owing to advanced decomposition; height about 5 feet 8 inches. At the head lay an ocean-shell container and several bone needles, one of which contained an eye; at the neck were pearl and shell beads; on the chest a copper axe, on which was preserved woven fabric and the head of a small raptorial, presumably a hawk; and an image of an eagle's foot and claws, cut from mica; on the abdomen, a second copper axe, and at the right hand a beautiful spear-point, 7 inches long, made from the same amber-colored chalcedony as that found with Burial 22. Between the skulls of the two burials lay a mica human hand of large size and fine workmanship; at the abdomen, and between the forearms of the two skeletons were two shield-shaped objects of mica. Effigies of human hands, made of copper, were found in the Mound City Group (p. 375).

On the chest of the skeleton to the north lay a second mica eagle foot, differing from the other specimen in



FIG. 35. Burial Number 47, Mound 25, Richly Supplied with Ornaments.

having, in addition to the three toes, a fourth toe, or thumb. At the hips were two mica circles and a curved mica figure; at the ears were copper spools and at the neck a number of shell beads.

A crematory basin, (Fig. 34) the largest found by the present Survey in the Hopewell group, measured 4 feet in length and 3 feet 1 inch in width. It was carefully made and measured 8 inches in depth. The location of this basin, which contained nothing, is shown on the floor plan.

MINOR FEATURES OF MOUND 25

Minor features of the interior of Mound Number 25 include the post-molds, which for the most part correspond to the outer circumferences of the primary mounds or charnel-houses over which they were built; the log-molds, the purpose of which is not obvious; hearths or fire-places, which occur at several places on the floor-plan, and which are the usual accumulations of charred matter, ashes and debris resulting from ceremonial or utility fires kindled on the floor of the sacred structure.

As a result of his partial examination of the mound, Moorehead suspected the existence of intentional designs, or mosaics, effected both through the use of stones and colored earths. As to the great boulder mosaics reported to have existed just below the surface of the mound prior to its disturbance, the Survey obviously can afford no further information owing to their complete eradication before its examination was effected. Reference is made to Moorehead's comment thereon in his report (p. 104).

With respect to earth mosaics, we read in the same report (p. 106):

"This being removed (a stratum of indurated gravel near the bottom of the section) by dint of hard labor, what may be a mosaic of red, yellow and purplish-colored earth was encountered. These masses of earth were so numerous, and of such definite shape, that, after a careful examination, we have come to the conclusion that they were intended to represent certain forms and, although larger and much cruder, were probably not unlike the sand paintings made by the Navajo and some other tribes."

The Survey eagerly anticipated the finding and verifying of definite and intentional earth mosaics in Mound Number 25, as well as similar phenomena in stone. The evidence was not forthcoming, however, and while the coloration of the various earths, due to mineral content and bacterial action often was striking, no intentional use of colors to effect designs could be detected.

In the matter of stone mosaics, on the floor of the mound, Moorehead (p. 106) says:

"West of this fireplace (Section 2) upon its outer edge, there was a small mosaic of fine stones. About four feet * * * south of the fireplace was a layer of stones in the form of a semi-circle. Nine feet south of this was discovered still another layer of stones which had been laid with so much regularity that it was impossible not to remark its intentional shape. It seems evident that mosaics of many definite shapes were built at the base of these mounds, although hitherto these have been generally overlooked by archaeologists."

There is no reason to doubt that such phenomena existed in Mound 25, and it would have been most gratifying to this Survey to be able to record them. However, while stones intentionally placed on the floor were discovered, they failed to assume any definite form. The most noticeable manifestation of the sort noted in the present examination consisted of an oval area 12 feet

by 6 feet in size, carefully paved by rounded stones. The location of this, which appeared to have no connection with any other activity, will be noted on the floor plan. A similar though not so marked an example of this sort was noted adjacent to Burial Number 11, within the great central charnel-house. A condition which might easily suggest the presence of intentional figures in stones was noted in connection with the outer margins of the interior primary mounds, where a fringe of coarse gravel and fine stones often was found.

Owing to the great size of Mound Number 25, its unusual original shape, and its partial examination, much speculation has been had as to its interior structure, as a whole, and the significance of its form. The completed examination and the resulting floor-plan map furnish answers to these queries.

EVIDENCE ACCRUING FROM EXAMINATION

The evidence of the completed examination is as follows:

The oval area corresponding to the floor of the mound as a whole—some 470 feet long by approximately 130 feet maximum width—had been utilized as a sacred place, where funeral ceremonies and interment—cremated or otherwise—were held. The entire space was carefully leveled and cleared of all obstructions and was covered by a stratum of coarse sand and gravel.

A sort of wall or circumvallation, composed of stones and earth, enclosed the area, corral-like. This wall may have been supplemented by pickets, although no definite proof of this was evolved.

Within this area, corresponding to its central portion, were erected, as needed, charnel-houses for the dead, their confines usually being marked by vertical posts set into the ground. An alternative of this procedure was the heaping of small mounds of earth over burials placed on the floor. A total of four or possibly five of these structures existed in Mound 25, two of which were of first importance. Three of the five were delimited by vertical posts, and two of them—the two more important ones—had definite primary mounds erected over them.

Not a single burial was found in more than 100 feet of either end of the mound proper; and yet these barren portions contained a marked floor and had been accorded the mound-covering along with the central grave-bearing area. At points approximately 100 feet in from either end the Survey encountered the margins of the central mound, erected over the interior primary mounds and charnel-houses. The outermost trenches of the former survey had come down upon these, but their extent had not been sufficient to identify them as such. By systematic razing of the entire structure it was plainly evident that the central portion had first received its covering and that afterward each of the ends, which presumably served as assembly room for those participating in the sacred ceremonies, and therefore was of itself sacred ground, was similarly covered. The mounds erected over these ends, piled upon and against the slopes of the central mound, naturally produced the form which, before its disturbance, gave the impression of being three conjoined mounds.

As has been assumed by others, Mound 25 must

have been a process of growth through a considerable period of time. To account for the multiple burials, apparently representing family groups, found in this and other mounds of the culture, it becomes a logical supposition that some form of temporary burial and re-burial obtained with the Hopewell peoples, as with certain historic tribes.

MOUND NUMBER 26

Mound Number 26 of the Hopewell group had been entirely overlooked in previous explorations, and is unrecorded in text or maps of Squier and Davis and Moorehead. It is located just within the extreme southern arc of the enclosure encircling mounds 25 and 5, 6, 7, and 8. It is so near the embankment, in fact, that its southern margin blends with the enclosing wall of earth, while on its north side it has barely escaped destruction by the railroad, on whose right-of-way fully one-third of the tumulus lies.

It is not surprising, perhaps, that the existence of Mound 26 had been overlooked. When the old Clark residence was built, some years prior to Squier and Davis' examination of the group, considerable modification of the mound resulted from grading the farmyard and in preparing a private driveway, which passes directly over the tumulus. Its identification came as the result of a test shaft sunk by the present Survey to determine whether or not the low extended elevation was natural or artificial in origin. This test disclosed at a depth of slightly under three feet a marked floor level, heavily graveled and showing the effects of burning. The floor plan of the mound is shown as Fig. 36.

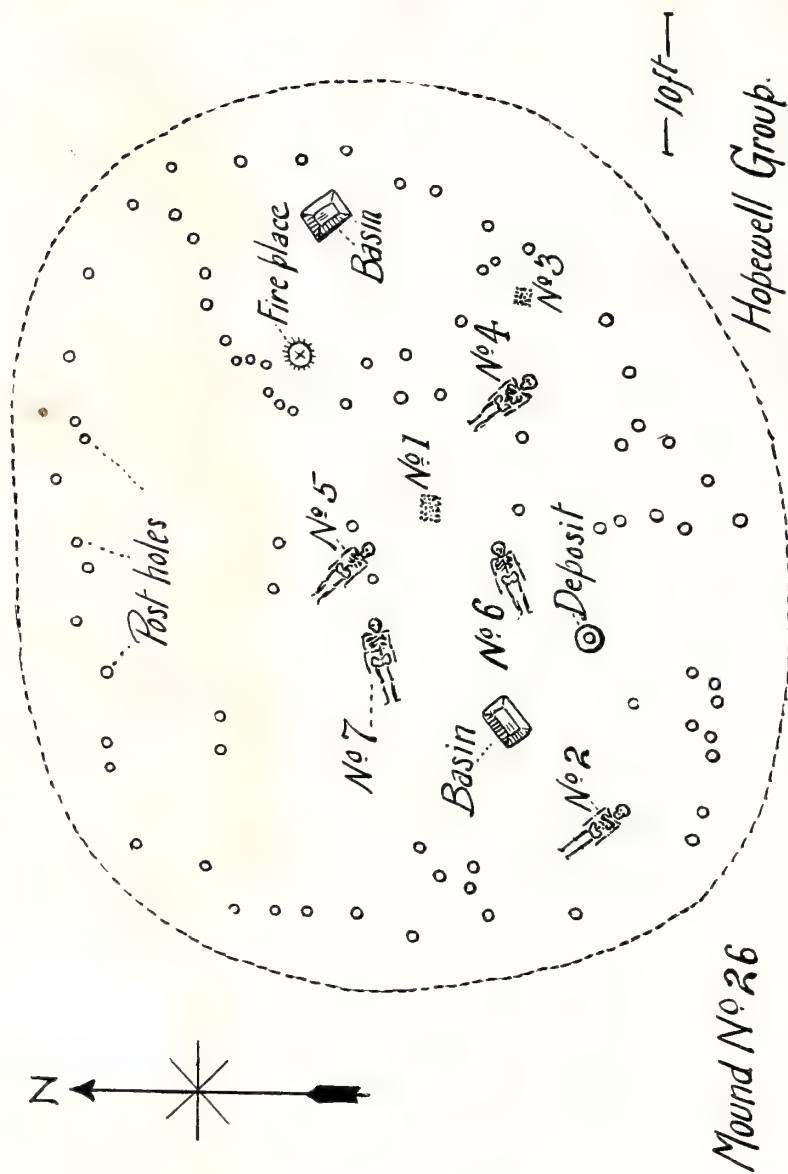


FIG. 36. Floor Plan of Mound Number 26.

Burial Number 1, disclosed by the Survey's test shaft, was a typical cremated burial, with which was a small rectangular plate of thin copper. The burial had been enclosed by a structure of small timbers. One other cremated burial — Number 3 — was found in this mound. It was very similar to Burial 1, excepting that it was accompanied by a copper ear-spool and a number of shell beads.

Burial Number 2—Young adult, badly deteriorated; 100 pearl beads, some of them very large and well preserved, at the neck; a few smaller pearls at the right wrist.

Burial Number 4—Uncremated adult of about 5 feet 10 inches; remains much deteriorated, owing to shallowness of burial and passing of wheel-track of private roadway directly above it. At the head, two copper ear-spoons and a few shell beads.

Burial Number 5—Uncremated skeleton of an adult of medium size; in each hand a copper ear ornament and at the neck a few pearl beads.

Burial Number 6 (Fig. 37) was the most interesting of the mound. It contained the uncremated skeleton of a massive male, of middle life, and of about 6 feet in height. The body had been placed in the grave flat upon the back, as were all others of the mound. Legs and arms were flexed, producing a rather grotesque effect. Upon the skull rested a helmet-like head-dress of copper, curved to conform to the crown of the head. While the skull was crushed, it was evident that it had been adorned with a very elaborate covering, since in addition to the copper helmet there were portions of woven fabric, many pearls, both large and small, a num-

ber of large spherical shell beads, and small beads made from marginella shells. At the neck were two pairs of canine teeth of the grizzly bear cut and drilled in an ingenious manner and set with large pearls. At the neck, also, were six split bear canines, drilled for attachment, and several hundred exceptionally fine and well preserved pearl beads. At the hips were the remains of an elaborate loin covering, consisting of a rectangu-



FIG. 37. Burial Number 6, of Mound 26, with which a Unique Pearl Necklace was Found.

lar copper plate, upon which, at the perforations, were two very large oblong pearls. This plate had been fastened to a coarsely woven fabric, or loin cloth, which was further decorated by numerous pearl beads. Additional split bear canines were at the hips, and near the right foot was a container made from an ocean shell. To the left of the head, at a distance of 15 inches, lay a finely preserved trophy skull—that of an adult of perhaps 25 years. With this separate skull was a fine

platform pipe, of gray pipestone; four circular shell disks, perforated; and a number of shell beads, some of which were large spherical specimens. The burial had been enclosed in a pretentious rectangular enclosure of logs.

The pearl beads forming the necklace with this burial, shown as Fig. 78, are perhaps the finest and best preserved taken from any Ohio mound. They retain in great part their rich luster, and a degree of hardness that in many of the individual specimens approximates that of fresh pearls.

Burial Number 7 was that of a middle-aged person measuring about 5 feet 11 inches in height. A pair of copper ear-spools were at the skull, one at each ear; a number of shell and pearl beads were at the neck and above the head; while in each hand was a fine copper axe. This skeleton, as was true of most others of this mound, was badly decomposed.

An interesting deposit, presumably a ceremonial offering similar in purpose to the more pretentious deposits of some of the larger mounds, was disclosed a few feet west from Burial 6. The deposit occupied a basin-like depression in the body of the mound, the bottom of which was one foot above the floor. This basin had been dug into the mound after it had reached its present height, as was clearly evidenced by a cross-section, its gravel stratum forming the prepared bottom of the receptacle; but whether it had been dug after the mound had been completed or at some stage of its progress could not be determined, since the grading off of the mound had destroyed the evidence, above its present top surface.

Within the basin-like receptacle, which measured almost 4 feet across its top, were found about 1000 shell beads; five extremely long flake knives of a red translucent flint; a pair of copper ear-spools; fragments of woven fabric; and an exceptionally fine large scrolled copper plate, with which, at the perforations, were two large oblong beads, one of pearl and the other of shell. The plate had been secured to a base of wood, about $\frac{5}{8}$ of an inch in thickness, portions of which were fairly well preserved. No human remains accompanied the deposit.

A *Crematory Basin*, (Fig. 38) small and finely made, measuring 20 by 26 inches at the rim and having a depth of 5 inches, was disclosed toward the west center of the mound. The floor contiguous to this basin was burned to a deep red color and was strewn with



FIG. 38. Crematory Basin of Mound 26, which Contained Copper Axes and Beads.

carbonaceous matter. The basin was filled with loose charred matter to its very top, and within this mass was found a deposit of specimens, as follows: four finely made copper axe- or adze-blades, two of which had been intentionally broken; six peculiar objects, made from marine shell, and strikingly like the modern thread spool in size and form; a large oval bead of shell; a number of large shell beads, pointed at the ends; fragments of thin marine shell; and several thousand very small tubular bone beads, made from sections of the hollow bones of small birds. There were no cremated human remains in the basin, and the greater part of the charred mass was composed of grass, twigs and leaves, with a considerable amount of charred woven fabric. The basin in which this deposit rested was removed intact and placed on display in the Museum.

A Second Basin, similar in form to the above but without contents, was disclosed near the outer margin of the mound at the north-east. It measured 22 by 28 inches, and was $5\frac{1}{2}$ inches deep. Dimensions of Mound 26 were approximately 35 feet by 40 feet.

MOUND NUMBER 27

This mound, of considerable extent but almost obliterated by cultivation and (presumably) former examination, lay not more than 60 feet to the north-east of Mound 20. It was found to have been almost completely dug over, and only a single burial — well out toward its western margin — was found. This, the badly decayed skeleton of an adult, was accompanied by a bone awl, placed at the head.

According to two or more old residents of the vi-

cinity it was this mound, and not the nearby one within the orchard lot, which Moorehead examined and which he described (p. 94) as Mound Number 20. Since the actual Mound 20 was intact, this seems probable. He records the finding of several interesting burials some of which were richly supplied with specimens, among which were large bear canines, plated with copper; mica designs; copper bracelets and copper cones.

An exceptionally handsome platform pipe, of large size and made from cream-colored Ohio pipestone, tinged with red, is shown as Fig. 70. It was presented to the Survey along with other specimens by Mrs. M. C. Hopewell, owner of the group, with the information that it was taken from the above mound. It is one of several specimens retained by Mr. Hopewell, the (then) owner, by arrangement with the former survey.

MOUND NUMBER 28

This small mound, not previously recorded, is located toward the northwest corner of the large enclosure at the very foot of the steep terrace. It was only ten inches in depth with a lateral extent of probably not more than 20 feet, there being no distinct floor and the original surface line being disturbed by the plow, excepting at the central highest point. Its identity was disclosed only by a test, since it resembles several other slight elevations bordering the foot of the terrace, due to the deposition of talus from the adjacent slope.

The mound was found to contain a small basin, measuring 27 by 23 inches, in which were fragments of a pottery vessel; portions of mica designs; two flint-flake knives, and several hundred small tubular bone beads.

No cremated skeletal remains were in evidence. The top of this basin lay within an inch of the plow line.

MOUND NUMBER 29

Just at the foot of the ravine which carries the overflow from the large spring into the plain below, is a mound which must have been of considerable magnitude before exploration and cultivation reduced it to its present not inconsiderable size. It is not shown on either the map or Squier and Davis or that of Moorehead. However, it was found to have been fully explored and the evidence that was forthcoming from its partial re-examination makes it clear that it is the mound described by Moorehead (p. 90) as Number 17. Since the true Number 17 was found to be undisturbed and far too small, it is not surprising to find that the mound in question answers both as to dimensions and internal structure to that described by Moorehead. The striking feature of his examination was the finding of immense quantities of sheet mica. Mound 29 is permeated with fragments and scales of mica, resulting from the removal of such a deposit, and there seems to be no doubt as to its identity.

AUXILIARY MOUNDS

Mounds 30 to 38 — Two small mounds, lying outside the Hopewell enclosure, were noted by Moorehead and shown on his map as Numbers 21 and 22. Of the former he says (p. 95): "This mound was examined on September 28. It was small and had been previously examined. Nothing was found."

These mounds are shown on the present map as

Numbers 37 and 38. The change in numbers of these tumuli — the only instance wherein the former numbering has not been followed — is in the interest of numerical sequence, so that designation of the supplemental mounds, as compared with the mounds proper, may be distinct and consecutive.

Examination of the fine plateau lying above and to the north of the Hopewell works proper disclosed that in addition to Mounds 37 and 38 there exist five other similar mounds, all of them quite small, entirely outside but in close proximity to the enclosures of the group. Two additional outlying mounds were located on the lower terrace, on which the group is situated. These likewise are outside the enclosures, and lie within the angle formed by the union of the square with the rectangular enclosure, at the north-east. Thus, the present map depicts the location of a total of nine auxiliary or supplemental mounds, in addition to the 29 mounds within the enclosure — 38 in all.

Since, in this section of the state, it is the rule rather than the exception to find burial mounds of a lower culture on the highlands adjacent to Hopewell remains; and since but few outlying supplemental mounds had been noted in connection with others of the Hopewell culture groups, the present Survey hardly expected to find that the auxiliary mounds, in this instance, were to be attributed to the builders of the great group under examination.

Re-examination of the two noted by Moorehead showed that both had been dug over, and that nothing remained to furnish a clue to their origin. Each of the remaining seven, however, yielded unmistakable evi-

dence of having been erected by the builders of the Hopewell group proper. Of the total of nine supplemental mounds, only one (Number 33) was of more than rudimentary size.

Mound Number 33 was 30 feet in diameter and 3 feet in height and, as is true of others of the supplemental series occupying the plateau has never been disturbed by cultivation, the land on which they are situated being a fine upland pasture, with scattering forest trees. The floor level of the mound was found to be the artificially smoothed and compacted original surface of the soil, some 20 feet across. Around its circumference was an encircling ridge of coarse gravel, 6 inches high at its inner margin and spreading outward from 3 to 5 feet to the original level. With the exception of the one-third portion to the southwest the entire floor was covered by charcoal and ashes, in which were interspersed burned animal and bird bones, fragments of mica, many pottery fragments and other evidences of intensive occupancy. At the center and northeast the floor was considerably burned, suggesting fire-places. Among the pottery fragments were several large decorated pieces of the ceremonial variety, including the entire base of one vessel with the characteristic feet; the greater portion of the potsherds, however, were of the utility sort. Other objects found were a section of two-ply rope, the size of clothes-line; portions of bone bodkins and needles, several with eyes; bear canines; a broken sandstone gorget; flint-flake knives, broken flint projectile points, and so forth. While several post-molds were found interiorly, they could not be definitely located around the margin. Nevertheless, the evidence

appears to indicate that the mound covered a lodge- or house-site, where domestic activities prevailed.

Locations of others of the supplemental mounds may be noted on the map. Their examination was, on a lesser scale, a repetition of that of Mound 33, including Mounds 30 and 31, on the lower terrace. In every instance potsherds, flake knives, mica fragments and flint flakes were found, and in each, usually at the center, was the burned space suggesting a fire-place.

EXAMINATION OF THE WALLS

Mindful of the possibility of the presence of burials or occupational evidences within or beneath the walls of the enclosures of the Hopewell group, examination of their more prominent portions was effected. Some 200 feet of the east wall of the principal enclosure, adjacent to the conjoined square where the embankment was exceptionally bold, was excavated. Upon the original surface were found several unimportant and not well defined fire-beds, which apparently were only incidental to occupation previous to the erection of the wall. Tests at other points revealed nothing.

EVIDENCES OF OCCUPANCY

Within the large enclosure at the points indicated on the Map are small areas containing evidences of occupation, such as fragments of bone, flint flakes, occasional flake knives, potsherds and bits of mica. Dark soil and burned stones indicate limited occupancy of the site, but nothing commensurate with the importance of the group, and the problem as to where its builders and occupants lived, remains a puzzling one.

III

SPECIMENS FROM THE MOUNDS

A satisfactory classification of artifacts from the mounds is difficult to effect. Classification on the basis of raw materials of which they are composed is impracticable, for obvious reasons; while uncertainty as to use or purpose of many types and individual specimens, together with the probability that for the most part they served more than a single purpose, makes any conceivable classification something in the nature of a compromise.

The fact that in primitive human culture the several phases of activity are not so abstract or specific as under an advanced stage of civilization is particularly marked in the evidences from the Hopewell mounds. Domestic utility, personal adornment, social diversion, artistic and decorative effort, ceremonial and religious procedure — all are found overlapping and merging one with another.

However, in the hope of making more concise and intelligible the description of artifacts from the Group, the following classification is offered:

- Objects of Domestic Utility
- Objects of Personal Adornment
- Objects of Ceremonial (problematical) Use
- Objects of Artistic (aesthetic) Conception
- List of Raw Materials Utilized.

OBJECTS OF UTILITY

The builders of mounds of the Hopewell culture placed very few implements and utensils (utility ob-

jects) with their dead. Further, it is a lamentable fact that very little in the way of work-shop sites or habitation sites, the normal sources of information as to the every-day life of a primitive people, have been found in connection with works of the Hopewell culture. As a result of these conditions, the few objects of domestic utility recovered are confined to occasional occurrence in ceremonial offerings and to scattered specimens on the floors of mounds, within their component earth, or on habitation sites in connection therewith. Many of the objects listed in this group logically might be classed with objects of ceremonial or artistic use. This is particularly true of the tobacco pipes, the pottery ware and the chipped implements of flint and obsidian.

Woven Fabric — Considerable quantities of coarsely woven cloth, somewhat resembling burlap, were found with burials of the several Hopewell mounds. In one or two graves there was noted the imprint of a fabric loosely woven from flat fibers or splints, suggesting a sort of basketry. None of the more finely woven fabric, such as that taken from the Tremper Mound (p. 236) was found by the Survey. A study of the Hopewell fabrics is incorporated in Moorehead's report on the group (p. 172).

An interesting example of weaving was the finding, adjacent to Burial 11, of Mound 25, of a carrying bag used in transporting soil in constructing the mound. The container was woven from splints or flat strips and resembled fine basketry rather than cloth.

Abrading Stones — An interesting series of sandstone implements was found by Moorehead in Basin Number 1 of Mound 25. These specimens, some of

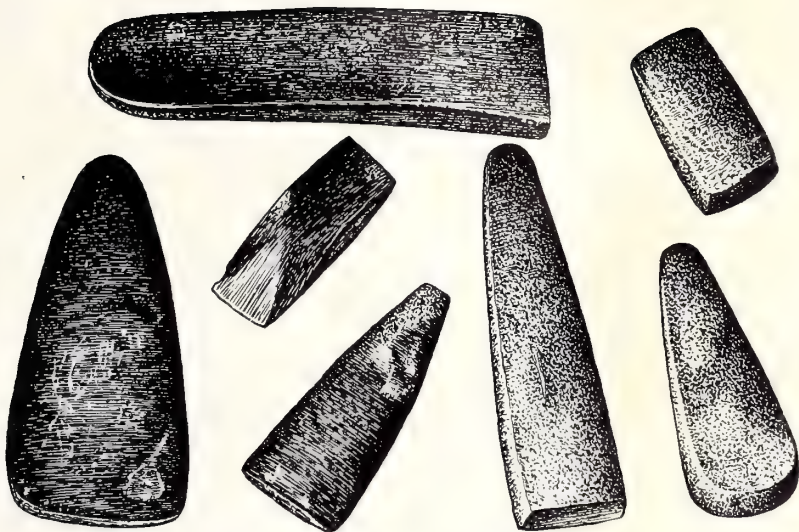


FIG. 39. Sandstone Abrading Tools from Mound 25. ($\frac{1}{2}$)

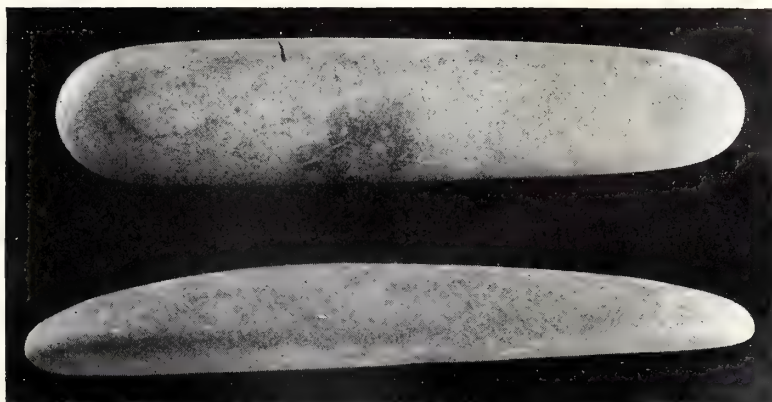


FIG. 40. Sandstone Abrading Tools, or whet-stones; Mound 17. ($\frac{3}{4}$)

which are shown in Figure 39, were not so identified at the time but personal study of them by the writer and comparison with a similar series found by this Survey in Mound 17 leads to the conviction that they clearly are tools used for abrading, grinding and sharpening. The fairly large series of these specimens from the two mounds ranges from small angular pieces of sandstone, one inch long, bearing facets resulting from use as abrasives, to specialized forms, tabular, square and oval in shape and measuring up to 6 inches in length. These implements are made from sandstone of fine to coarse texture, and in every respect are admirably suited to the working of stone, copper and other materials used by the Hopewell peoples. Two of the larger of the implements from Mound 17 are shown in Fig. 40.

Stone Celts — The stone celt, or ungrooved axe, is occasionally found with burials of the Hopewell culture, and not infrequently on the floors of mounds where they apparently have been unintentionally or accidentally left. From the relatively greater abundance of copper implements of this type, the metal tool seems in great part to have supplanted that of stone.

Doubtless the largest and most important deposit of stone celts taken from an Ohio mound is that found as a part of the great ceremonial offering in Basin Number 1, of Mound 17. This series of implements, comprising more than 50 specimens, ranges in size from less than 2 inches to 15 inches in length. The materials from which they are made comprise the granites, diorite, syenite, gabbro, slate and other rocks from the local glacial drift. The range of size and form is shown in Figures 41 and 42, while in Figure 43 are illustrated

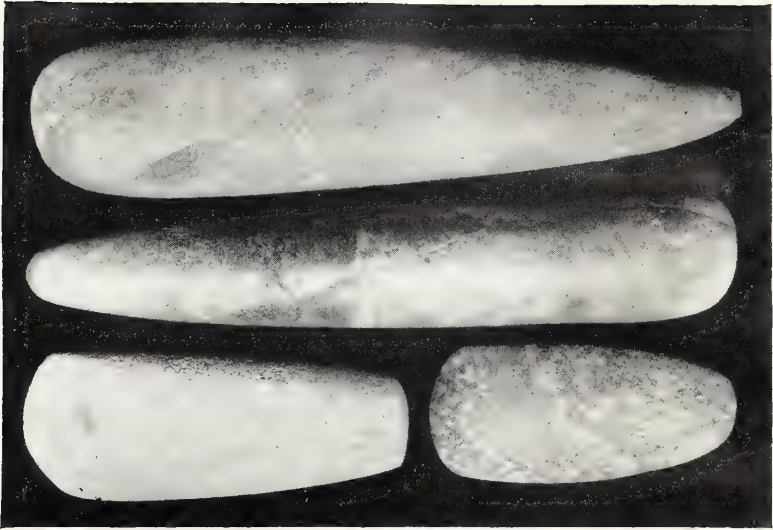


FIG. 41. Stone Celts ; ungrooved Axe and Mattock Blades ; Mound 17. ($\frac{1}{4}$)



FIG. 42. Stone Celts or Ungrooved Axes ; Mound 17. ($\frac{1}{5}$)

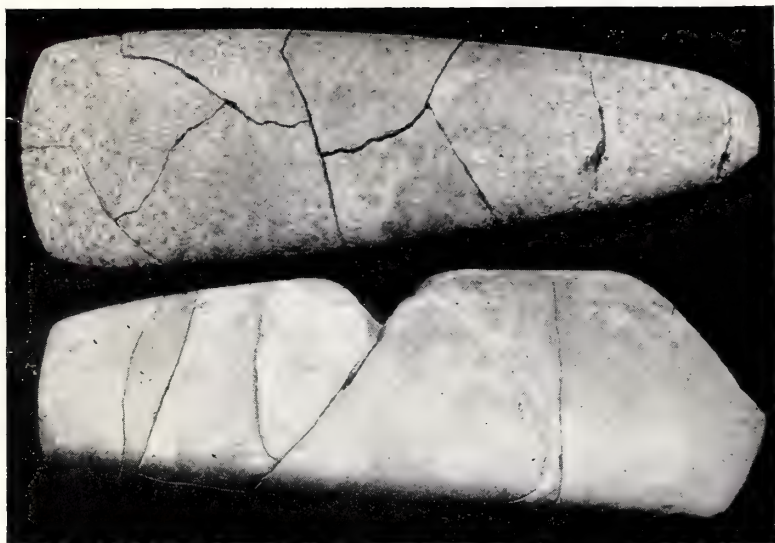


FIG. 43. Stone Celts, Ceremonially Broken or "Killed"; Mound 17. ($\frac{1}{3}$)

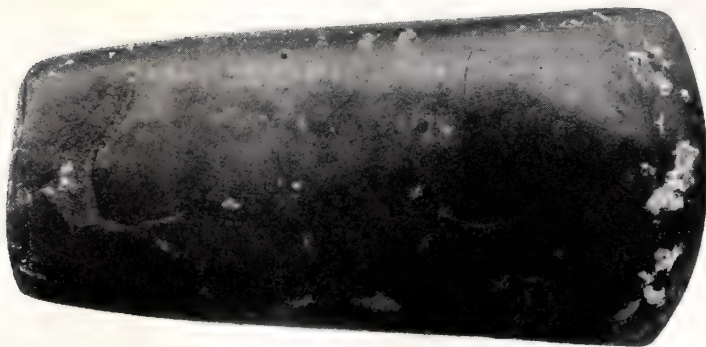


FIG. 44. Ceremonial Celt of Cannel-coal; Burial 22, Mound 25. ($\frac{1}{2}$)

two specimens which have been subjected to the ceremonial breaking, or "killing" so frequently found in connection with ceremonial offerings. Some of the larger specimens, as the upper two in Figure 41, appear to have been used as digging implements. One of these had been supplied with a handle, after the manner of the modern pick or mattock, as evidenced by a roughened dark section toward its upper end.



FIG. 45. Grooved Stone Axe from Ceremonial Offering. Mound 17. ($\frac{1}{2}$)

A finely fashioned celt made from cannel coal is shown in Figure 44. This specimen was found with Burial 22 of Mound 25, and probably was a ceremonial implement.

Grooved Axes—The grooved axe is not associated with the Hopewell culture, the specimen illustrated in Figure 45, found in Deposit Number 2 of Mound 17, being the only one recorded from a Hopewell mound. This finely-made specimen, presumably a product of a

non-moundbuilding tribe, may have been found by the builders of Mound 17 and added to the sacrificial offering of which it was a part.

Copper Axes and Adzes—This type of implement is almost as characteristic of mounds of the Hopewell culture as are the ever-present copper ear-spools and copper breast-plates. It assumes two forms, suggesting somewhat different methods of attaching the handle and consequently in its use. The adze type, three specimens of which, from graves of Mound 25, are shown in Figure 46, has the cutting edge curved with respect to the plane of the long axis, thus presenting one convex and one concave face for the implement. In this type evidently the handle was secured at right angles to the faces of the blades while in the axe type, the edge of which corresponds to the median line, the handle apparently extended parallel to the faces. In Figure 47 are shown drawings of interesting implements of the axe type. The largest specimen, which is $22\frac{1}{2}$ inches long and weighs 38 pounds, probably is the largest prehistoric copper implement in existence. It was found by the Moorehead survey in the remarkable deposit of artifacts, including 66 copper axes, with Burials 260 and 261, Mound 25. The second largest implement shown, a spud-like specimen, is 12 inches in length and weighs 17 pounds. It was taken from Mound 23 by the former survey. The smallest of the four specimens shown was found by the present Survey on the site of the above-mentioned deposit. It affords a good scale for comparison in the great range in size of these copper implements. The fourth specimen is a typical axe from Mound 26.



FIG. 46. Copper Adze Blades, from Burials in Mound 25. (1/1)

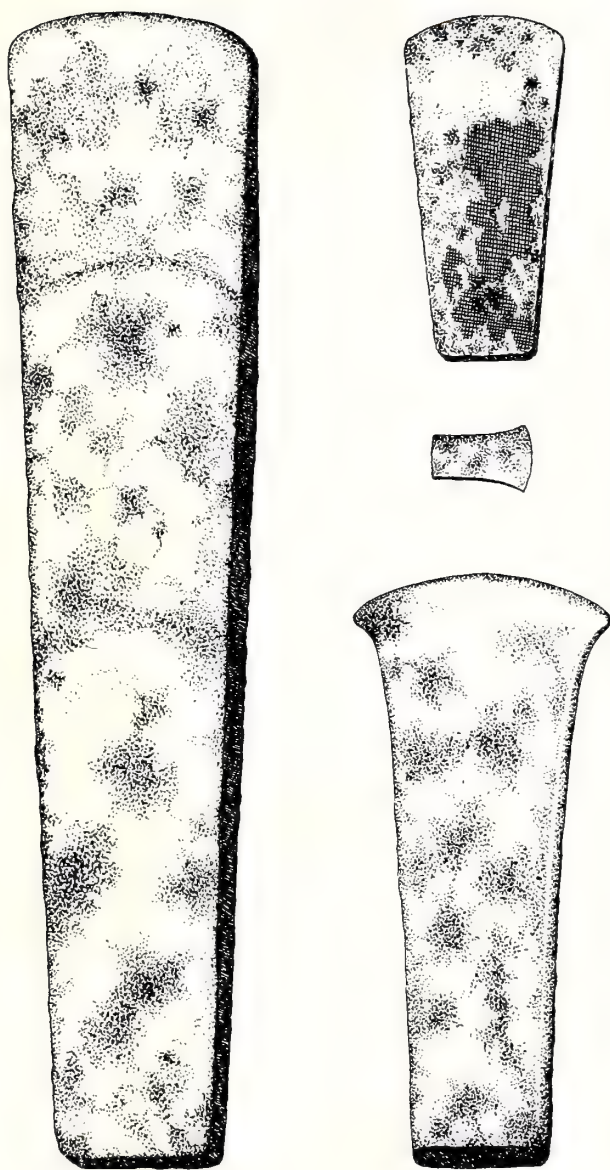


FIG. 47. Copper Axes: Above Specimen weighing 38 Pounds, from Mound 25; lower left, Spud-shaped Axe, weight 17 pounds, from Mound 23; both from Moorehead Survey. Diminutive Specimen and, lower right, a Typical Axe, from Mound 25. Recent Survey. ($\frac{1}{4}$)

The copper axe and adze are patterned closely after their prototypes in stone; and while obviously the metal implement had mostly displaced the stone tool, it is interesting to note that the latter, though presumably much inferior for most purposes, was still in use by the builders of the Hopewell group.

That the copper axe, while primarily a utility implement, possessed a considerable degree of ceremonial significance is indicated by its frequent burial with the dead. Furthermore, such implements as the two larger specimens shown in Figure 47 plainly are more than utilitarian in purpose.

Chisels and Gravers — Canine teeth of the beaver were freely used by the Hopewell peoples as chisels, the cutting edge of the tooth sometimes being accentuated by grinding. Two such implements, found with Burial 22, Mound 25, are the central specimens in Figure 48. Beneath these is a short straight chisel and above, a curved chisel, both specimens made from meteoric iron. In Figure 49 will be seen several additional curved chisels of meteoric iron, set in handles of antler. These specimens were taken from Altar 1 of Mound 25 by the Moorehead survey. It is worthy of note that the metal implements appear to have assumed the curved form of the natural tool afforded by the beaver canines.

Awls and Needles — Piercing and sewing implements are of occasional occurrence in the Hopewell mounds. They usually are made of bone or antler and less frequently of copper. In Figure 50 there are shown typical specimens of these implements. At the bottom of the illustration is an awl made from the leg-bone of a deer and, above, a long curved perforated bodkin fash-

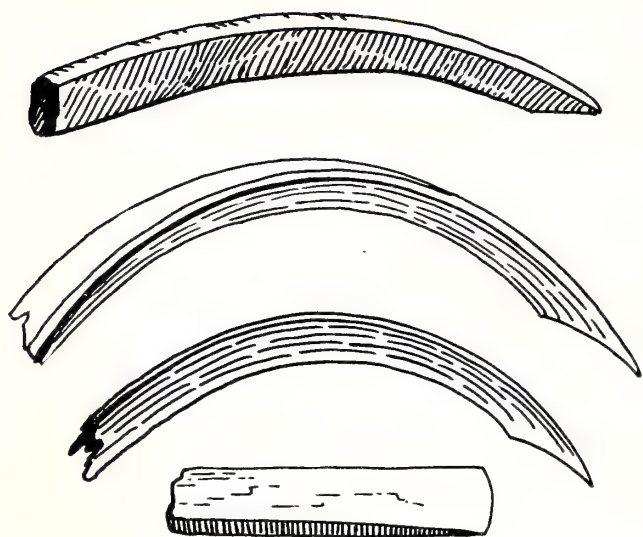


FIG. 48. Beaver Canine Teeth (center) used as Chisels, and Tools of Meteoric Iron fashioned after them. ($\frac{1}{4}$)

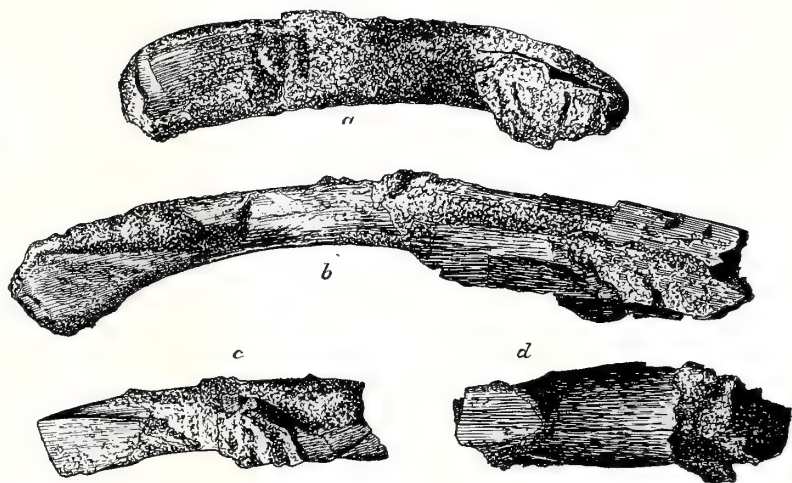


FIG. 49. Chisels of Meteoric Iron, in Bone Handles; Mound 25, former Survey. ($\frac{1}{4}$)

ioned from a deer rib, both from Burial 41, Mound 25; immediately above the bone awl is a flat perforated bodkin, from Burial 2, Mound 23; and two bone needles from Burial 47, Mound 25. A number of broken perforated needles were found in several of the auxiliary mounds.



FIG. 50. Bone Awls, Needles and Bodkins; Mound 25. ($\frac{1}{2}$)

In Figure 51 is shown an awl or punch of copper, the battered head of which suggests the manner of its use; from sacrificial offering Number 1, Mound 17.

Pottery Ware — Numerous sherds but no whole pottery vessels were found by the present Survey in the Hopewell group. On the floors of the auxiliary mounds there were the remains of several broken vessels of the utility type, as shown in Figure 52. Occasional pieces of ceremonial vessels were found scattered through the



FIG. 51. Copper
Implement
Resembling
a Punch;
from Mound
17. ($\frac{7}{8}$)

soil or on the floors of the several mounds. Examples of these are shown in Figure 53. The Moorehead survey took from one of the two habitation sites within the enclosure a broken vessel of the utility type, and from Altar 1, Mound 25, portions of an interesting vessel of ceremonial ware. Two fine vessels are described in the Society's report on the Mound City group, (p. 332) and an interesting study of the Hopewell type of pottery-ware may be found in the report on the Turner group (p. 90). Incidentally, pottery-ware is one of the few sources of comparison which seem to indicate affinity of the Hopewell peoples with other cultures — the Hopewell ware having decided resemblances to that of the early Algonquian peoples of the northeast.

A noteworthy study of the pottery-ware of the Hopewell and adjacent cultures is that of W. H. Holmes.¹²

Shell Containers — Of common occurrence in the mounds of the Hopewell group and others of the culture are containers, vessels and dippers made from marine shells, preferably the large conchs from the Gulf and the Southeastern seaboard. Three of these specimens are illustrated in Fig-

¹² Holmes, William H., *Aboriginal Pottery of the Eastern United States*, Twentieth Report, Bureau of Am'n. Ethnology, Washington.

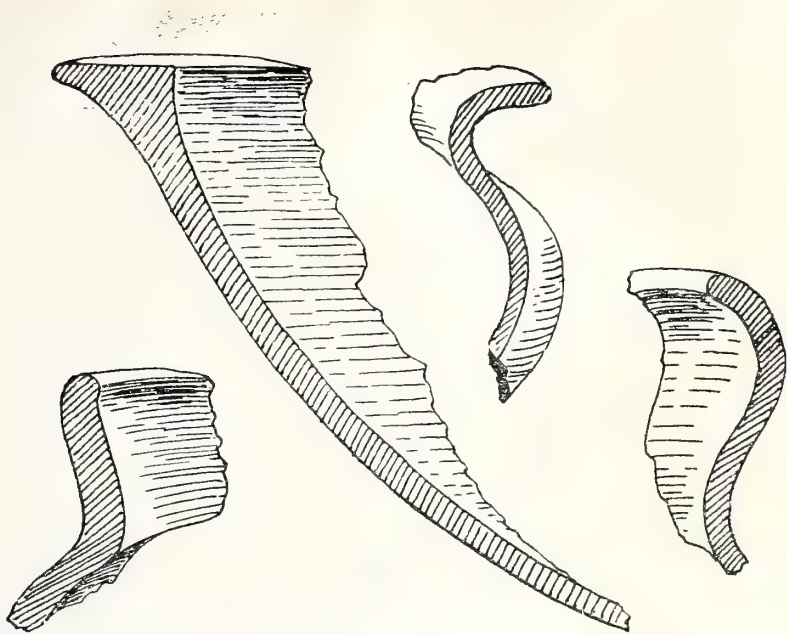


FIG. 52. Potsherds Showing Types of Rims; from the Auxiliary Mounds.
($\frac{1}{4}$)

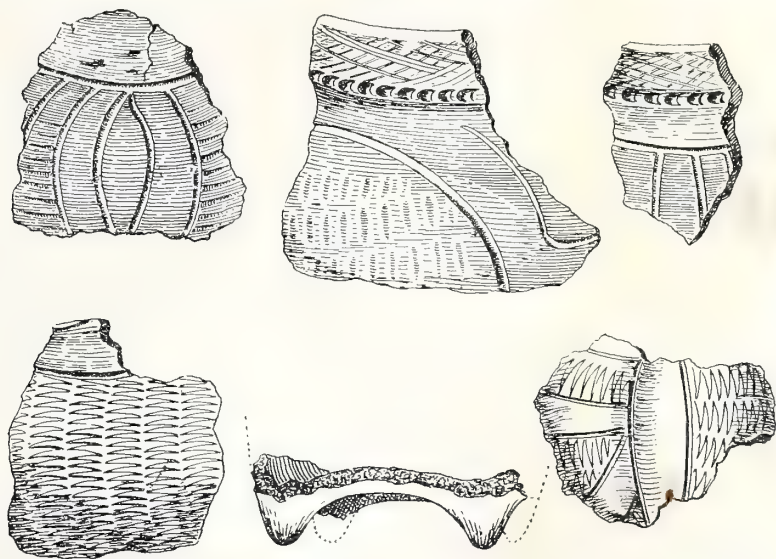


FIG. 53. Potsherds from Ceremonial Pottery, showing Designs; Mound 17.
($\frac{1}{2}$)



FIG. 54. Container and Gorget, of Ocean Shell; Mound 25. ($\frac{1}{8}$)



FIG. 55. Large Shell Containers; from Mound Number 2. ($\frac{1}{8}$)

ures 54 (Cassus) and 55 (Fulgur and Fasciolaria). Removal of the whorl of the shell and grinding or smoothing of its margins resulted in a very serviceable container. This natural and presumably earlier vessel had one decided advantage over the pottery-ware, in that it was much less subject to breakage.

Stone Vessels — Containers fashioned from stone are of very rare occurrence in mounds of the Hopewell culture. The most noteworthy of the few found is that shown in Figure 56. This remarkable vessel, made from white limestone, is 12 inches in diameter and weighs 14 pounds. It was taken by the Moorehead survey from Mound 23.

Two small saucer-shaped vessels, shown in Fig. 57, were found by the present Survey in sacrificial offering Number 1, of Mound 17. They are exquisitely fashioned, the material being a chloritic schist closely resembling the so-called goldstone.

Flint-Flake Knives — Typical examples of the many flint-flake knives found with burials of the Hopewell mounds are shown in Figure 58. Two specimens at the upper right are slightly notched, apparently for attachment to a handle. The flake knives of the Hopewell mounds are made almost exclusively from Flint Ridge material, the exceptions being occasional ones of obsidian and chert and several unusually large and fine specimens found with the ceremonial offering in Mound 26 which were made from translucent red flint, the source of which is unknown. The unusual quality of the Flint Ridge chalcedony appears to have rendered it superior to copper for cutting purposes, since no knives proper are found of that material. Cores from which

the flake knives were struck are frequently found on the surface adjacent to the mounds. Several cores of obsidian, from Mound 11, are shown in Figure 12.

Flint Blades and Disks—This Survey was particularly fortunate in finding numbers of chipped flint ar-

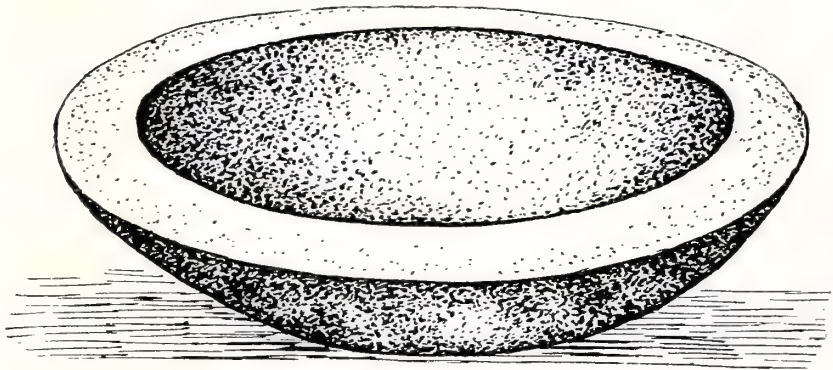


FIG. 56. Stone Dish 12 inches Across; Mound 23, former Survey. ($\frac{1}{3}$)

row- and spear-points. The Hopewell builders were particularly adept in the art of flint-chipping, although few such specimens are reported by other surveys. In Figure 59 are shown three typical notched arrow-points,

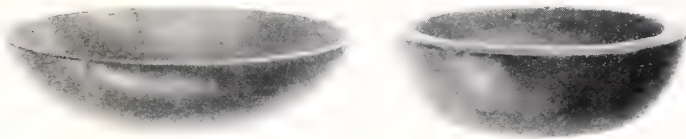


FIG. 57. Small Delicately Fashioned Stone Dishes; Mound 17. ($\frac{2}{3}$)

from Mound 17; in Figure 60, a small spear-point or knife, delicately wrought from translucent creamy flint from Mound 8, while in Figure 61 are illustrated two arrow-points, from Mound 4, and a large spear-point,



FIG. 58. Flint Flake Knives; from Mounds 4 and 25. (1/3)

of Flint Ridge material, found with Burial 20, Mound 25.

The two fine spear-points, presumably ceremonial specimens, shown in Figure 62, are from Burials 47 and 22, of Mound 25. They are fashioned from a strikingly handsome translucent amber-colored chalcedony, the source of which has not been determined. Both specimens are exceedingly thin and finely made.

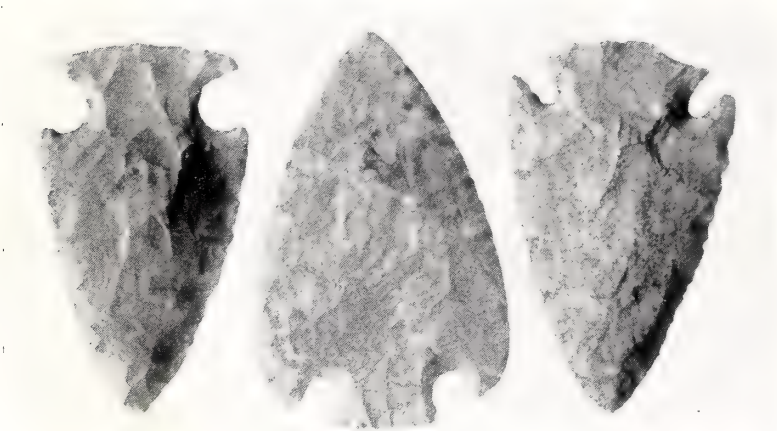


FIG. 59. Notched Flint Arrow-points; from Mound Number 4. ($\frac{2}{3}$)

In Figure 63 are shown a portion of a large finely chipped blade, of quartz crystal; examples of unworked crystals; and, left to right, large chips or flakes of smoky quartz, milky quartz and clear quartz, the residue from the chipping of quartz blades. This material was found within the component earth of Mound 25, at the western margin, apparently having been carried in from the adjacent surface in constructing the mound. Moorehead's survey secured a number of chipped quartz blades from the deposits of this mound.

The fine obsidian spear-point shown in Figure 64 is from Deposit Number 1, of Mound 17. It doubtless is more ceremonial than utilitarian in its purpose and is

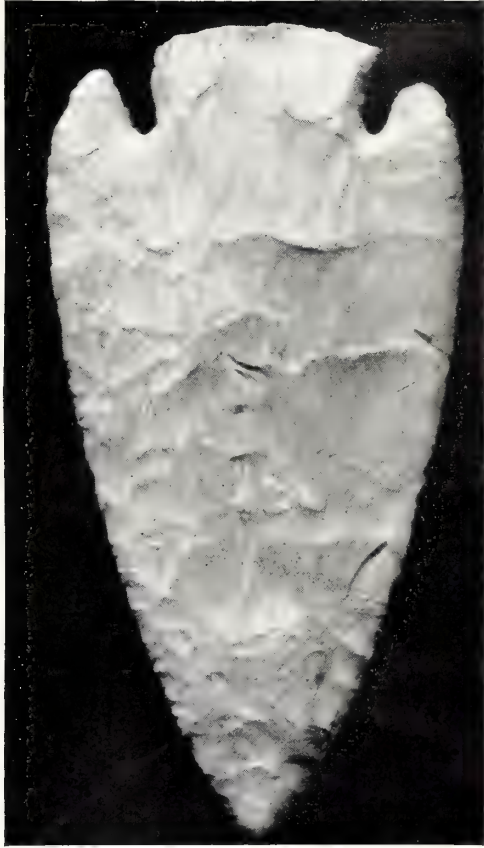


FIG. 60. Finely Made Flint Spear-point; from Mound Number 7. ($\frac{1}{4}$)

altogether similar to the large number of obsidian blades taken by the former survey from Altar Number 2, Mound 25.

In Figure 65 are shown two of the more than 8,000



(212) FIG. 61. Flint Arrow-points and a Spear-point; Mound 25. ($\frac{7}{8}$)



FIG. 62. Large Finely Made Spear-points of Translucent Amber-colored Flint;
from Burials 22 and 47, Mound 25. ($\frac{2}{3}$) (213)

flint disks, comprising the remarkable offering in Mound Number 2, most of which were removed by the Moorehead survey. These disks are made from a nodular or concretionary flint, similar to deposits found in southern Indiana and in Tennessee. Apparently the great number of disks were blocked out at the quarry and, at the expense of a surprising amount of labor, were transported to the Hopewell site and placed in the



FIG. 63 Chipped Quartz Blade, Quartz Crystal and Flakes; Mound 25. ($\frac{2}{3}$)

mound as a ceremonial or sacrificial offering. It is possible that the disks were intended as blank forms to be worked into finished blades by the persons or deities to whom the offering was made.

A single one of the large number of disks was fashioned into a specialized completed form. This specimen, shown in Figure 66, was reserved from the former exploration by Mr. M. C. Hopewell, the owner of the group, and by Mrs. Hopewell presented to the present



FIG. 64. Finely Made Ceremonial Spear-point of Obsidian; Mound 17. ($\frac{2}{3}$)
(215)

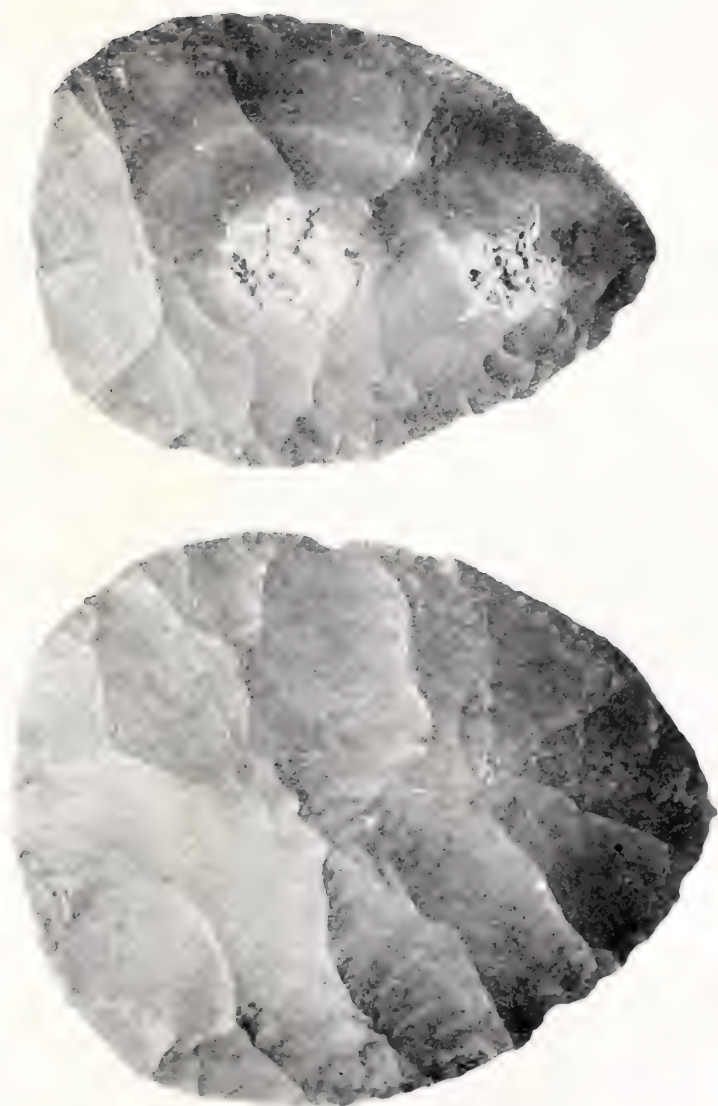


FIG. 65. Examples of more than 8000 Flint Disks Found in Mound Number 2, most of which were Removed by the former Surveys. (34)



FIG. 66. Large Flint Spear, the only Finished Specimen in the Disk Deposit
of Mound Number 2. ($\frac{2}{3}$) (217)

Survey. It is almost 9 inches in length and 6 inches wide.

The unprecedented sacrificial or ceremonial offering — a theory which seems to be the only logical way of accounting for this and similar deposits — of 8000 flint disks, fashioned at great labor, brought from a distance and deposited in Mound Number 2, is doubtless the most pretentious phenomenon of its kind so far disclosed.

Obsidian Blades — Although the obsidian spears from Basin 2 of Mound 25 are manifestly ceremonial in character, in form they are patterned after the utility spear-point of flint, and perhaps may be as properly discussed at this point as elsewhere.

The striking importance of this discovery of ceremonial spear-points of obsidian is not made apparent in Moorehead's report on the group. Only those who have seen the actual specimens in the Field Museum can have an idea of their great number, size and beauty. There are upwards of 150 of these almost unique objects, ranging in size from 3 inches to 17 inches in length and from one inch to 6 inches in width. The chipping, while bold, is remarkably clean and confidently executed. In form and outline the specimens are most pleasing. There are at least six distinct types or forms, the principal ones of which are illustrated in Figure 67, from outline drawings of the specimens. These definite forms are represented in the total number by a pair or more of each, the slender curved type being least in evidence and the large notched form the most abundant. Through exchange with the Field Museum, the finds of the present Survey were augmented by a number of these implements.

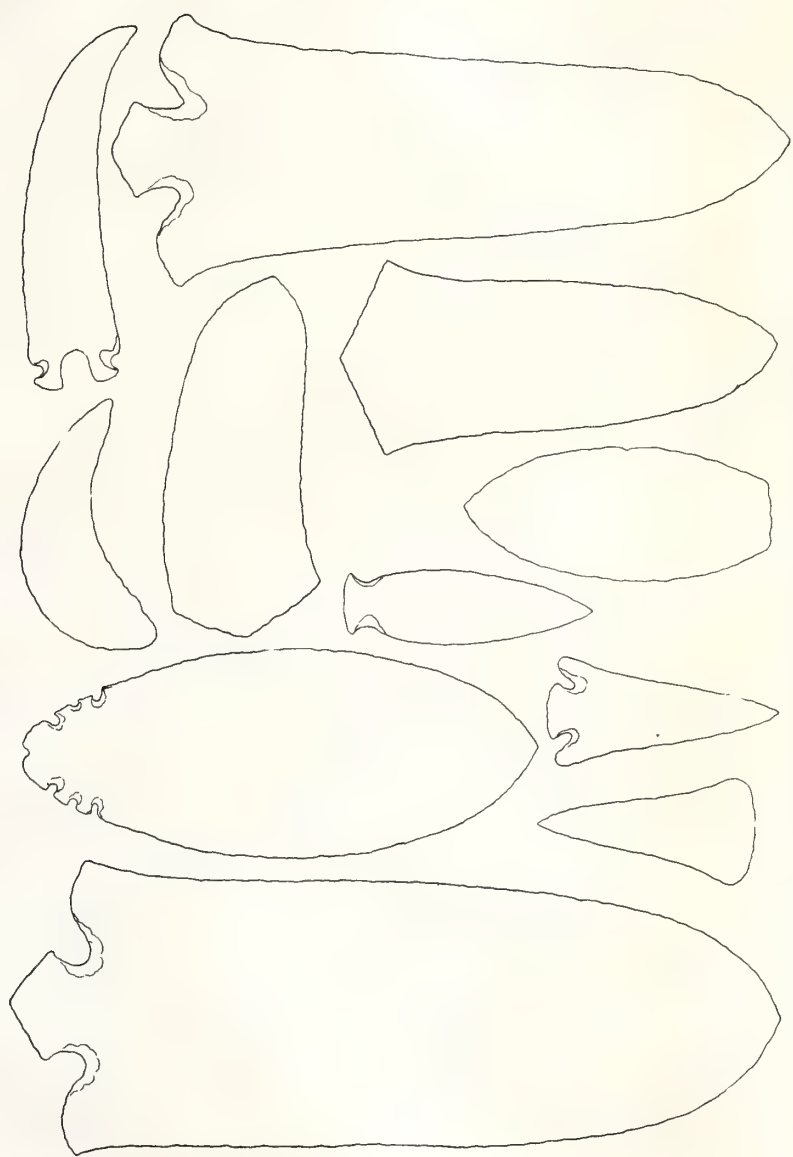


FIG. 67. Outline Drawings Showing Range in Form and Size of Obsidian Spear-points Found in Basin Number 2, Mound 25 ; former Survey. (1/4)

Tobacco Pipes—As practiced by the Hopewell peoples, smoking seems to have been in the nature of a ceremonial procedure, as in the case of others of the native race. However, while the act of smoking may be regarded as a ceremony, the pipe itself, as the means of carrying out the procedure, is in a sense a utility.

The typical Hopewell pipe, and the commonest form found, is that illustrated in Figure 68. These two plain platform pipes are from the offering (Number 1) found in Mound 17. An additional pipe from this offering, which contained a total of more than a dozen, is shown

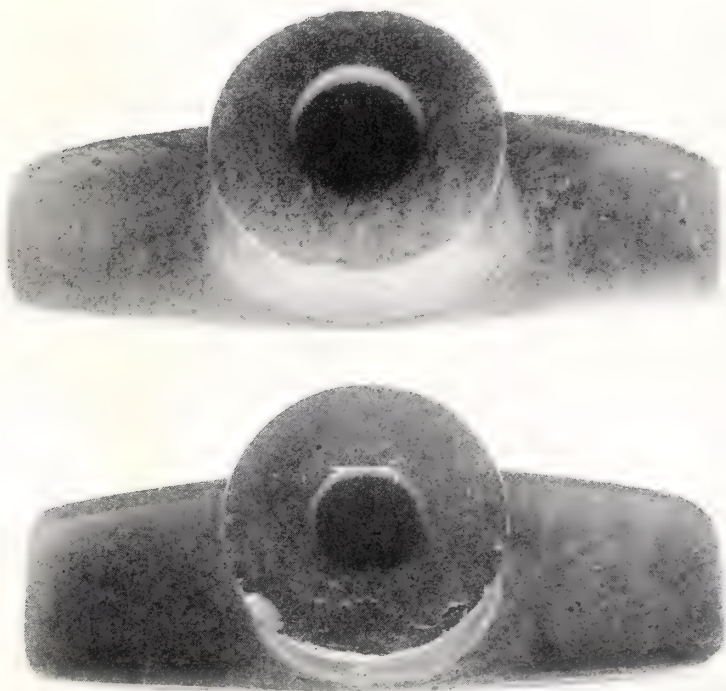


FIG. 68. Typical Platform Pipes, of Ohio Pipestone; Mound 17. (34)

as Figure 69. This pipe is made of the so-called Ohio pipestone, as are the above-mentioned, and is the largest typical platform pipe reported from an Ohio mound, its length being more than 6 inches. A handsome pipe, made from pink and cream-colored Ohio pipestone, is shown in Figure 70. This specimen was taken from Mound 27 by the former survey, presented to Mrs. Hopewell, owner of the group, and by her in turn given to the Museum.

In Figure 71 there is shown an unusual pipe, found with Burial 21 of Mound 25; material, green-black steatite. The top of the bowl is rectangular with square corners, the front and rear edges being decorated with notches. Corresponding to the median line of the platform, both above and below, is a raised portion. The platform is drilled from both ends, one perforation having been closed by fitting into it a neat plug of light-colored stone, while the other, apparently drilled too large, is closed by the insertion of a close-fitting cylindrical plug through which a smaller perforation has been effected. Around this inserted plug is a circular incision, which passes from the end to both faces of the platform.

Two interesting pipes, found by the Moorehead survey in Altar 2 of Mound 25, are shown in Figures 72 and 73. The former bears on the bowl a decorative motif representing apparently the shoveller duck, (*Spatula clypeata*), while the latter shows what appears to be the same bird with a captured fish.

Figure 74 illustrates a unique pipe, taken by the present Survey from Deposit Number 1, Mound 17. The specimen, of modified platform type, has each end



FIG. 69. Unusually Large Platform Pipe, from Mound 17. ($\frac{2}{3}$)



FIG. 70. Handsome Platform Pipe of Ohio Pipestone; Mound 27. (1/1)

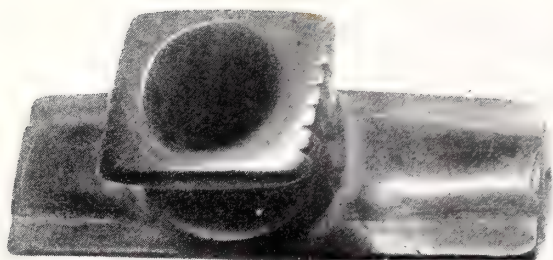


FIG. 71. Unusual Type of Platform Pipe; Burial 21,
Mound 25. ($\frac{1}{1}$)



FIG. 72. Fine Platform Pipe, with Decoration representing
the Shoveller Duck; from Basin 2, Mound 25;
former Survey. ($\frac{2}{3}$)



FIG. 73. Rare Effigy Platform Pipe; Mound 25; former Survey. ($\frac{2}{3}$)

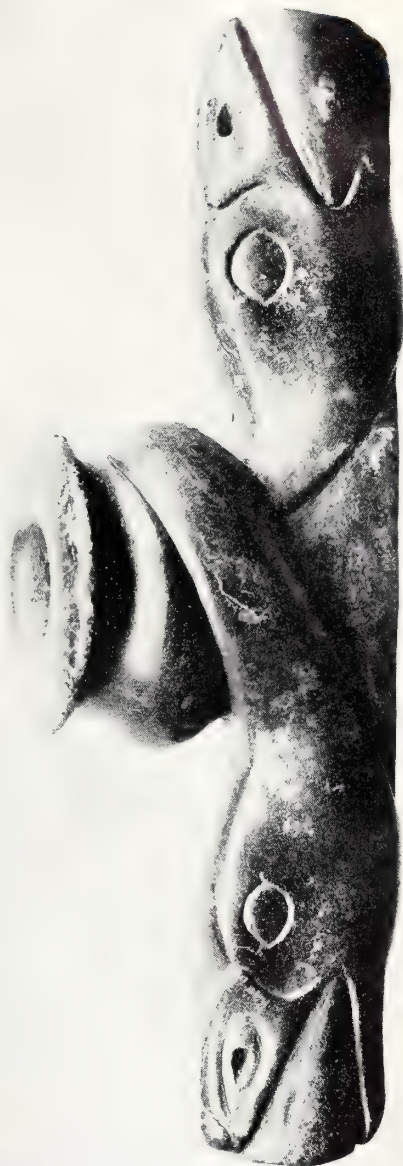


FIG. 74. Rare Pipe Representing the Heads and Necks of Wild Ducks or Geese; from Ceremonial Offering Number 1, Mound 17. ($\frac{1}{3}$)

of the platform carved into the semblance of the head of a wild goose or duck, the necks intertwining around the bowl.

The pipe presents certain features suggesting the calumets employed in the Pawnee hako ceremony and in similar ceremonies of their Siouan neighbors. It clearly represents, not living waterfowl, but the heads and necks of such fowl drawn over a cylindrical stem. The specimen is fashioned from green-black steatite and is highly polished.

A suggestion as to the significance of this pipe is found in a description of Pawnee calumets by Miss Alice C. Fletcher, in part as follows:¹³

"It was by this end (the end of a calumet enclosed within the head and neck of a wild duck) that the feather stem was held. The duck is familiar with the pathless air and water and is also at home on the land, knowing its streams and springs. It is the unerring guide."

Any discussion of pipes from the Ohio mounds would be incomplete without reference to the classic find of upward of 200 specimens, in effigy, taken by Squier and Davis (p. 152) from Mound Number 8 of the Mound City Group; and to the equally striking discovery, by this Museum, in the Tremper Mound, (p. 335) of Scioto county.

A valuable study of pipe forms and smoking customs, in which are included several Ohio pipes, is that of Dr. Ralph Linton,¹⁴ of the Field Museum of Natural History.

¹³ Fletcher, Alice C., "*The Hako, a Pawnee Ceremony*," An. Rep. B. A. E., Vol. XXII, Pt. 2, Pl. 21.

¹⁴ Linton, Ralph., *Use of Tobacco Among North American Indians*, Field Museum of Natural History, Anthropology Leaflet 15, 1924.

OBJECTS OF PERSONAL ADORNMENT

Specimens described under this caption, while mainly objects of personal decoration, partake in some instances of the ceremonial, the artistic, and even of utility. Pearls, teeth and jaws, particularly those of human beings, and some other objects must have held an element of ceremonial significance, while such objects as breast-plates, primarily decorative, may have served the subsidiary purpose of protection from arrows. Some of the head-plates and other objects of copper exhibit considerable artistic ability.

Shell Beads — In Figure 75 are shown a few of several thousand small beads, made from sections of hollow bones of birds, found in the crematory basin of Mound 26. In Figure 76 are shown, from various graves, globular, oval and disk-shaped beads of shell and, to the upper right, beads made from leptoxis shells.

Pearl Beads — It would be difficult to disassociate pearl beads from the Hopewell culture peoples. A burial which does not contain at least a few pearls is looked upon as poor indeed. In Figure 77 are illustrated the range in size of pearl beads found in the graves, the small seed pearls and the large specimens, comparable to small marbles in size, representing the extremes. In Figure 78 is shown a remarkable necklace of pearl beads found with Burial 6 of Mound Number 26. These beads, more than 300 in number, are not remarkable for their form, being mostly of the baroque and button forms and in no way comparable to the many fine spherical pearls found with other burials. Their preservation, however, as a result of a covering of charred vegetable matters and woven fabric, is perhaps un-



FIG. 75. Small Beads made from Bird Bones; Mound 28. ($\frac{1}{4}$)



FIG. 76. Types of Shell Beads from various Mounds; Spherical, Oval, Disk-shaped and, upper right, Small Univalves used as Beads. ($\frac{1}{3}$)

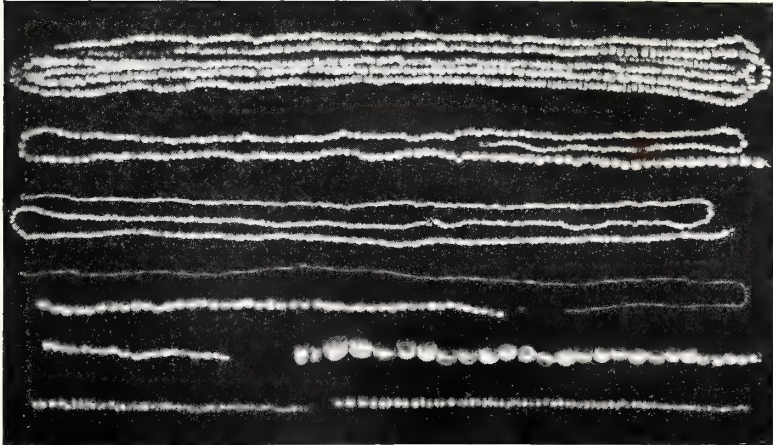


FIG. 77. Pearl Beads from the Various Mounds; Illustration shows the range of size and form. ($\frac{1}{4}$)

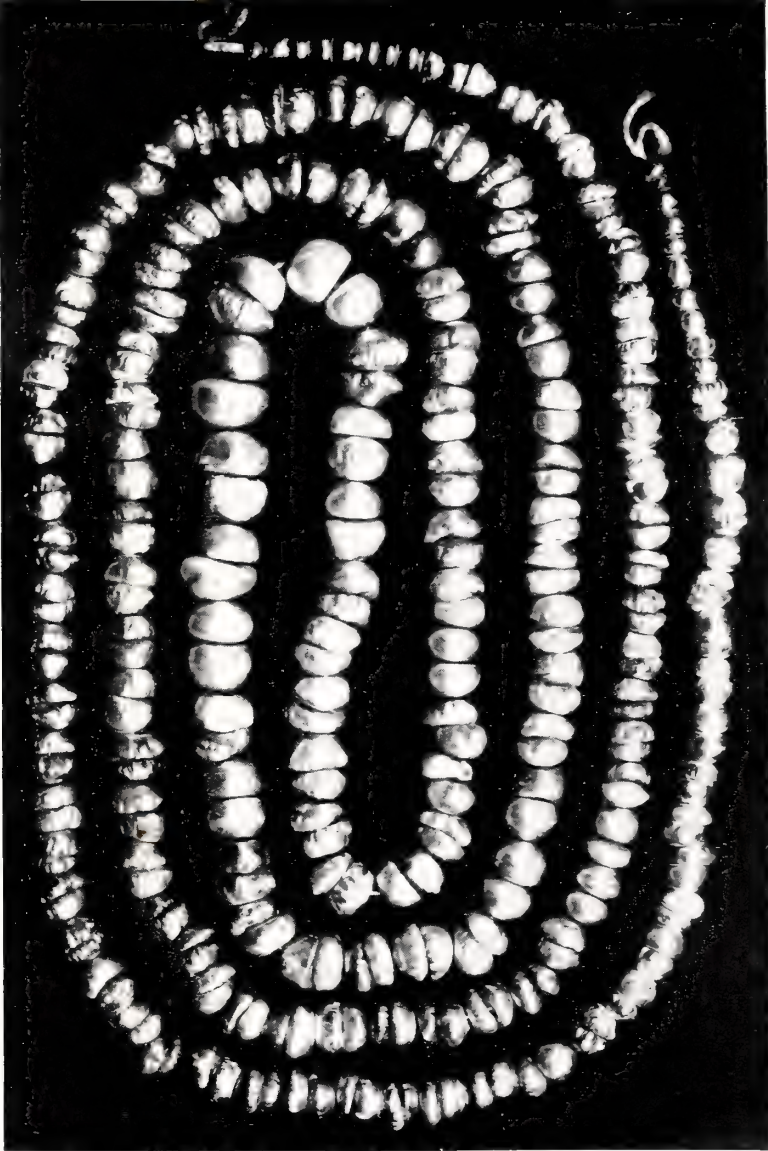


FIG. 78. Finely Preserved Necklace of Pearl Beads, from Burial 6, Mound 26. ($\frac{2}{3}$)

equalled in any prehistoric pearl necklace. Hardness and luster, aside from a yellowish tinge resulting from mineral stain, is almost unimpaired. The cord on which this necklace was strung was in part preserved but as shown in the illustration the beads have been re-strung. While the present Survey removed thousands of pearl beads from the burials of the group, many of them unequalled in preservation, the Moorehead survey secured a much greater number. The same is true of the Turner group, from which, in addition to perforated pearls, many unperforated specimens were secured.

The uncounted thousands of pearls possessed by the Hopewell peoples, many individual ones of which would be almost priceless in fresh condition at this time, come as a revelation to the student of these fresh-water gems. In contrast to the present scarcity, as a result of pearl- and shell-fishing and pollution of streams, pearl-bearing mussels undoubtedly were very numerous in prehistoric times. The presence of the pearls in Hopewell burials is proof that their pursuit was a leading industry of the occupants. The Ohio river, the Scioto and others of its tributaries, and some of the streams farther south appear to have been the principal sources of pearls and of the fresh-water clam or mussel (*Unio*), the mollusk which secretes them. An extended study of the Hopewell pearls and methods of drilling them, may be found in Moorehead's report (p. 146). A history of the pearl as a gem by G. F. Kunz¹⁵ is perhaps the most exhaustive and complete treatment of the subject.

¹⁵ Kunz, George F., *The Book of the Pearl*, New York, 1908.

Copper Beads — Copper was much less frequently utilized for the making of beads than either pearls or shell. An example from Burial 1 of Mound Number 2 is shown in Figure 79.

Shell Disks — The specimens shown in Figure 80 were found with a trophy skull accompanying Burial 6, Mound 26. They are the only examples of the kind found by this Survey in the group.

Beads of Teeth and Claws — In Figure 81, above, are shown canine teeth of the raccoon, drilled and used as beads; found with Burial 6, of Mound Number 4. In the same illustration are shown the canine teeth of an immature bear, utilized in an unusual manner. The tips of the teeth are ground off to expose the neural cavity and thus to permit stringing as suggested in the illustration. Since the bodies of the immature bear teeth are thin and shell-like, their utilization in this manner suggests the deer-toe rattles of the southwestern Indians. From Burial 34, Mound 25. Beads made from bear claws, found with Burial 41, Mound 25, are shown in Figure 82.

Bear Canine Ornaments — The extent to which the canine teeth of the bear were used by the Hopewell peoples, and the ingenious manner in which they were cut or sawed, mended by insets and dowel pins, drilled for suspension or attachment, and set with pearls, is most surprising. Not alone did they make use of the teeth of the native black bear, but they reached out to the far west in order to secure the canines of the grizzly bear. Of the hundreds of bear canines secured by the Survey from the Hopewell mounds, examples of the more interesting details of treatment are shown in the follow-



FIG. 79. Copper Beads, from Burial 1, Mound Number 2. ($\frac{2}{3}$)

ing cuts. The only constant feature of the preparation of these teeth for ornaments are the two countersunk holes on the reverse sides. Otherwise, the teeth may or

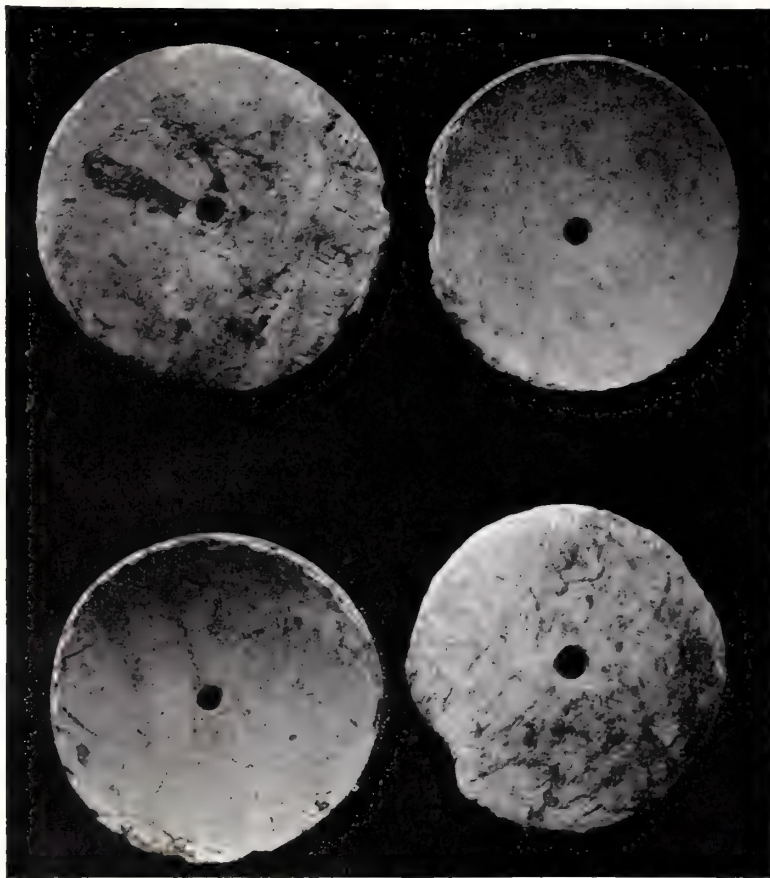


FIG. 80. Shell Disks, from Burial 6, Mound 26. ($\frac{1}{2}$)

may not be cut into two or more parts, set with one or more pearls, or mended by the use of bone dowels.

In figure 83 are shown five specimens illustrating most of the details of treatment. The specimens at the



FIG. 81. Beads Made from Raccoon Teeth and (below) from the Immature Canines of Young Bears; Mound Number 25. ($\frac{1}{2}$)

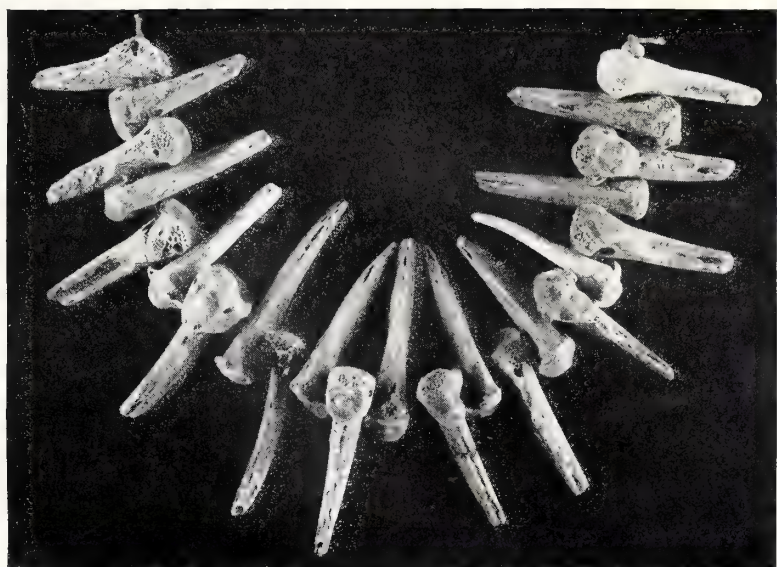


FIG. 82. Bear Claws Perforated for Beads; Burial 41, Mound 25. ($\frac{1}{2}$)
(235)



FIG. 83, Canine Teeth of the Grizzly Bear, Cut into Sections, Set with Pearls, and Drilled for Suspension ;
from various Mounds. ($\frac{3}{4}$)

left have detached bases, made from other and younger teeth; the fourth from the left has the tip cut off, apparently the original, and has a separate piece carefully set into the specimen and attached by a dowel. The tooth at the extreme right having suffered from the characteristic tendency to split and separate has been reinforced by two dowel pins of bone, the short portion at the tip being from a different tooth. The specimens shown in this cut are teeth of the grizzly bear, the longest of which measures 4 inches in length.

The drawing shown as Figure 84 affords a detailed study of nine canine teeth. In addition to external details, obverse and reverse, such as cutting, pearl-setting, decoration, inseting of separate pieces, mending by dowel pins, and so forth, neural cavities and drilled perforations connecting with them are indicated in dotted lines.

Figure 85 illustrates a specimen, obverse and reverse, having a mitred joint. The two parts, as is true in most instances, are made from separate teeth, carefully ground to effect a close joint. In the same cut are two pearl-set canines, the forms of which have been altered by grinding and polishing.

Imitation bear canines, made of bone, are shown in Figure 86. These were found with Burial 41, Mound 25.

An interesting example of the use of bear canines, found with Burial 35, Mound 25, is shown in the photograph, Figure 87 and in the drawing of Figure 88. The specimens consist of pearl-set canines inserted into handles or sockets of bone. These sockets bear decorations consisting of drilled depressions, incised lines and cross-hatching. Counter-sunk holes for suspension

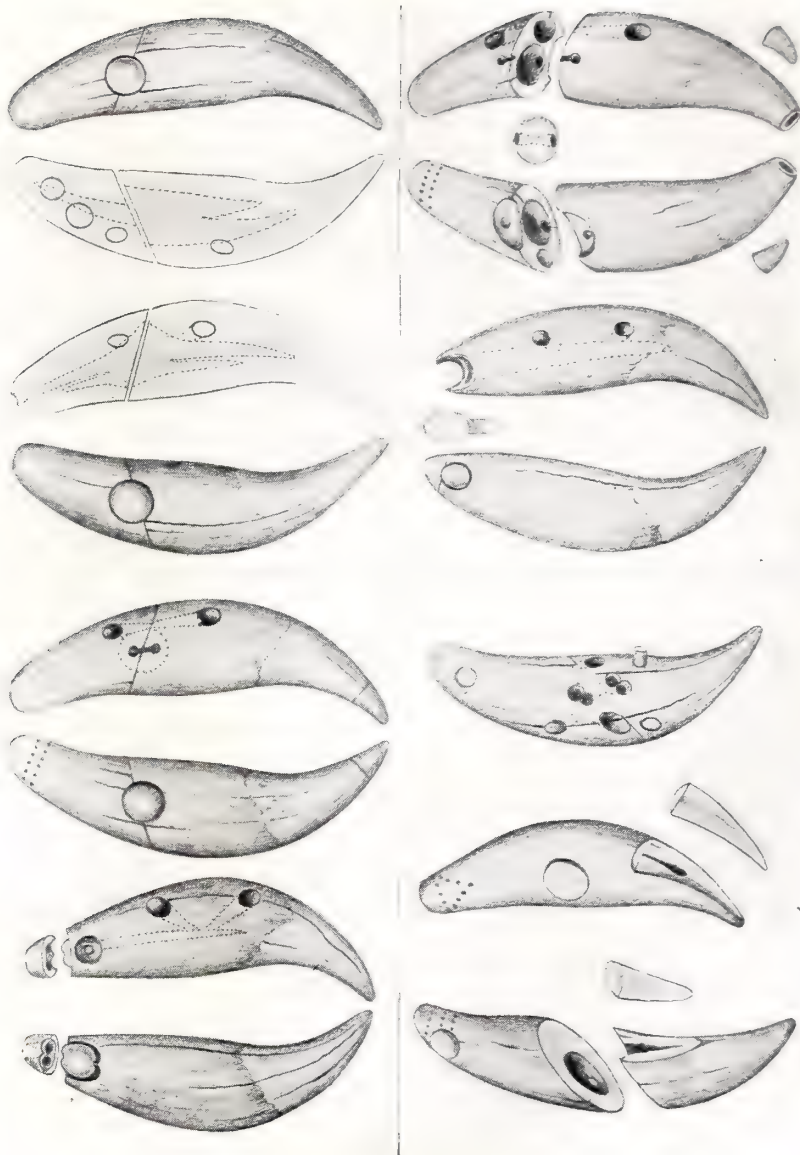


FIG. 84. Drawings of Bear Teeth, Showing Manner of Cutting, Perforating, Setting with Pearls and Repairing; from various Mounds. (2/3)



FIG. 85. Bear Canine Ornaments Showing Unusual Manner of Cutting and Decorating; from Mound Number 25. ($\frac{2}{3}$)



FIG. 86. Imitations of Split Bear Canines made of Bone; Mound 25. ($\frac{2}{3}$)

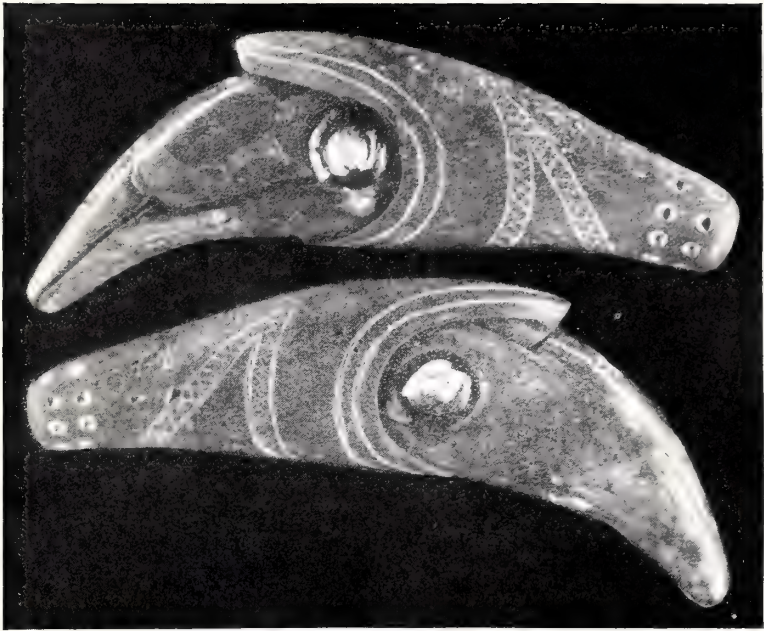


FIG. 87. Bear Canines Set into Decorated Bone Sockets; Burial 35, Mound 25. ($\frac{7}{8}$)

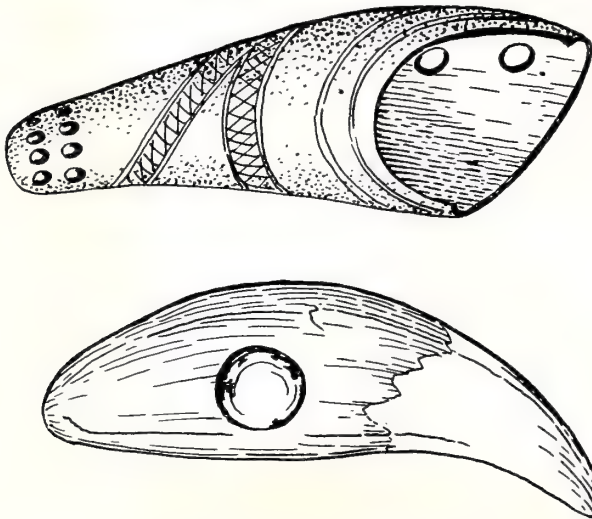


FIG. 88. Drawing of the Above Specimens to Show Details; Burial 35, Mound 25. ($\frac{7}{8}$)

pass through the reverse of the sockets and connect with those in the teeth.

Jaw and Teeth Ornaments — In addition to using the detached teeth of various animals as beads and pendants, the Hopewell peoples frequently utilized the jaws with their contained teeth in a similar way. Both upper and lower jaws were used, undesired portions of which usually were ground off, and the specimen pierced for attachments or suspension. In Figure 89 are shown

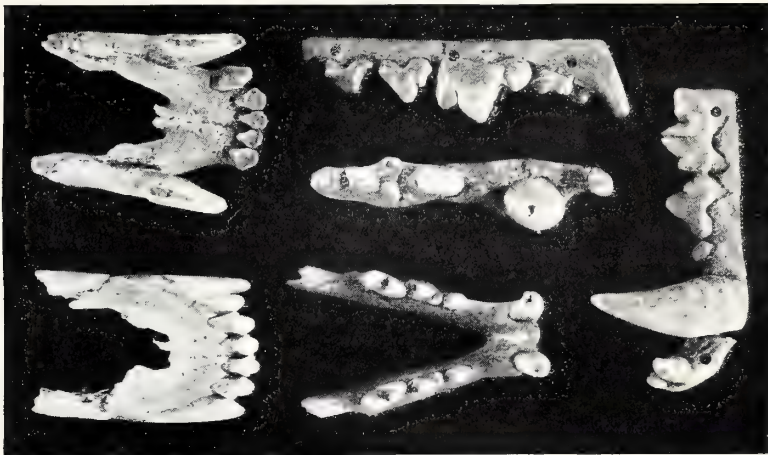


FIG. 89. Ornaments Made from Jaws of the Wolf, Wildcat and Mountain Lion; from Burials of Mound 25. ($\frac{2}{3}$)

several examples, among which will be recognized the upper jaws of the wolf, a lower mandible of the wild cat, a lower jaw of the wolf and two lower jaws of the cougar.

An unusual ornament, found with Burial 25, Mound 25, is shown in Figure 90. It is in the form of a pendant, made from the lower jaw of the barracuda. (*Sphyaena barracuda*.) It is the lower specimen in

the photograph, the detached ramus being shown immediately above and to the right. The jaw is drilled at the anterior end for suspension. It has, in addition to the canine, 26 teeth. Portions of two additional barracuda jaws, found with Burials 41 and 45, Mound 25, are shown in this cut. In so far as recorded, these are the only instances of the finding of jaws of the barracuda in Ohio mounds. The discovery emphasizes the

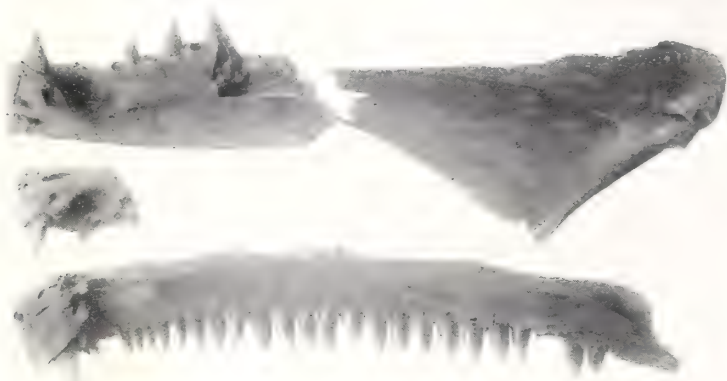


FIG. 90. Ornaments Made from the Lower Jaw of the Barracuda; Burial 25, Mound 25. (12)

extent and importance of the travel and commerce developed by the Hopewell peoples.

Human Skulls and Jaws as Trophies—A striking trait of the Hopewell peoples is the placing with their dead of separate human skulls and ornaments made from human jaws. Several examples of this practice were found by the Moorehead survey and the trait has been observed in most of the important Hopewell groups, notably at Turners. Our Survey found a num-

ber of examples, the more important of which were that with Burial 5, of Mound Number 2 (see Figure 6) in which instance a separate skull bearing a copper head-dress had been placed with the burial proper; a skull similarly placed, with Burial 6, of Mound 26; and with Burials 34 and 41, of Mound 25. The last-named bore a perforation through the occiput.

In Figure 91 (to the left) and 92 are shown an upper and lower jaw of the same individual, perforated

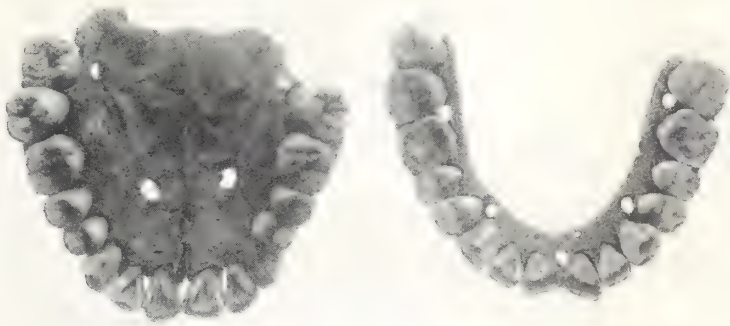


FIG. 91. Trophies made from Human Upper Jaws and Teeth, Drilled for Suspension; left, Burial 41; right, Burial 34; Mound 25. ($\frac{2}{3}$)

each with 5 holes for suspension and presumably for fastening together of the two. These objects were found, teeth together in their natural position, with Burial 41, Mound 25. An ornament made from a human upper jaw, the palate cut away and the specimen drilled for suspension (Figure 91) was found with Burial 34, Mound 25.

Interesting examples of human jaws used as trophies were found in the Harness Mound (p. 57).

An explanation of this interesting trait, as noted in the Hopewell works, may perhaps be found in the widespread primitive custom of retaining the skulls of captured enemies as trophies. Another possible explanation is the suggestion that the trophy skulls and jaws were those of departed relatives.

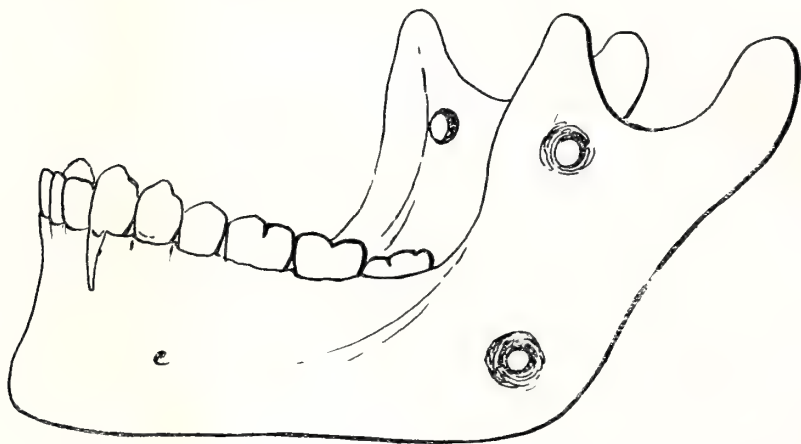


FIG. 92. A Human Lower Jaw, Perforated for Suspension as a Trophy; Burial 41, Mound 25. ($\frac{1}{4}$)

Spool-shaped Ear Ornaments—The copper ear-spool is the commonest form of metallic artifact found in burials of the Hopewell culture. Several hundred specimens were secured by the Survey from the various mounds, the most noted find being that with Burials 6 and 7, of Mound 25, where more than 50 of the copper ornaments were placed in a line extending from head to foot of the skeleton. Typical specimens of the copper ear-spool are shown in Figure 93, while in Figure 94 are several examples, from the above-mentioned burials, in which one side of each is covered by silver and the other side by copper, while the body of

the spool is made of meteoric iron. This combination of three metals in one object perhaps is unique in Ohio archæology. A number of typical copper ear-spools with one face covered by thin meteoric iron were found.

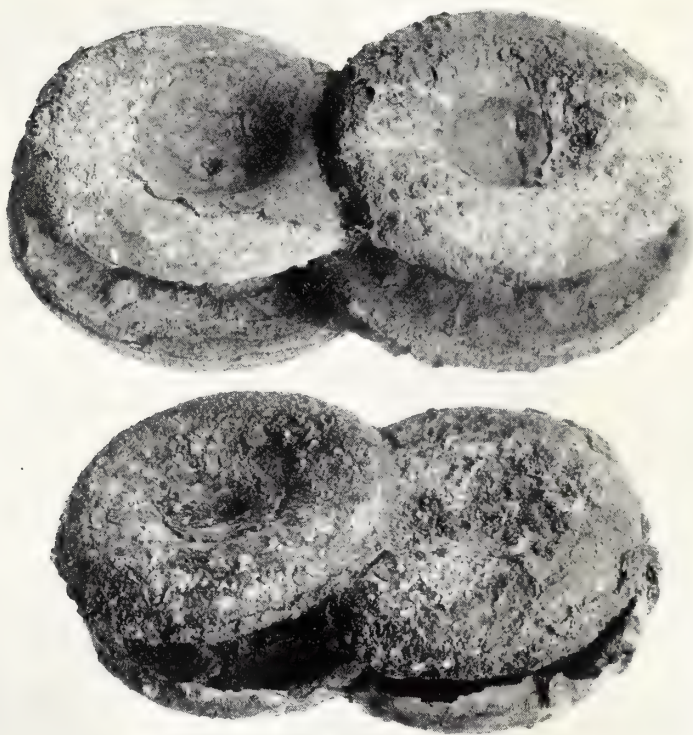


FIG. 93. Examples of Copper Ear Ornaments; Burial 6, Mound 25. ($\frac{1}{4}$)

Two unusual and highly specialized copper ear-spools, found by the former survey in Mound 25, are shown in Figure 95. These specimens, of which a pair each was found, are the only ones of their type reported. An interesting and valuable study of the copper ear

ornaments and their manufacture will be found in the Moorehead report (p. 121).

Copper Bracelets and Anklets—Three forms of this type of ornament were found by the Survey, the

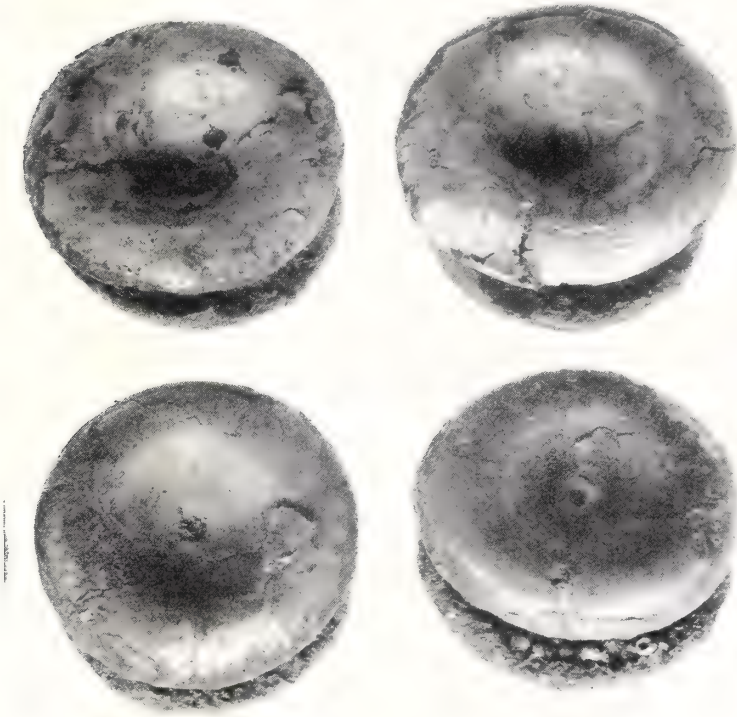


FIG. 94. Ear Ornaments of Copper and Meteoric Iron, covered with Silver, from Burials 6 and 7; Mound 25. ($\frac{1}{4}$)

simplest of which is shown as Figure 96. These specimens are solid cylindrical bars of copper fashioned into circular form to fit the wrist, and were found in Deposit Number 1, Mound 17. Another pair of bracelets or anklets, from the same Deposit, is shown as Figure

97. This type is made from plano-convex bars of copper, bent to the usual circular form with the convex face interior, and unlike the former the ends overlap instead of meeting in the same plane.



FIG. 95. Unusual Type of Copper Ear Ornament; Mound 25, former Survey. ($\frac{1}{4}$)

With Burial 7 of Mound 25 there were found four bracelets — two on each forearm of the skeleton — of a third type. These were in the form of hollow cylin-

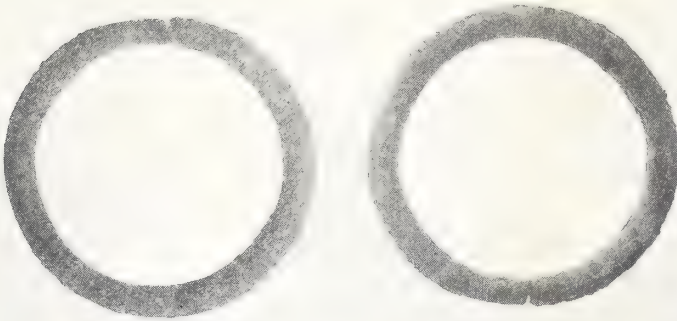


FIG. 96. Copper Bracelets of Circular Section; Mound 17. ($\frac{2}{3}$)

ders, each being made from a flat strip of copper, rolled into a tube and then brought to the circular shape. The seam, in this type, is placed interiorly and is not closed,

a cross-section of the specimen being shaped like the letter C.

The last-named type of bracelet is the only one found by this Survey with uncremated skeletons, and no evidence of the utilization of the form as anklets was forthcoming. In his report (p. 122) Moorehead describes numerous bracelets and anklets of the several types, found with burials and in the basins of Mound 25. In the Turner group (p. 46) there are several cop-



FIG. 97. Copper Bracelets or Anklets, Plano-convex Section; Mound 17.
(²/₃)

per bracelets of the solid cylindrical form, one of which has a covering of thin silver.

Copper-covered Buttons — Numerous button-shaped objects made variously from stone, clay and wood with coverings of copper, silver and meteoric iron, were found with burials throughout the group. In numerous instances the wood interior is strikingly preserved by the copper covering. The range of materials and sizes is shown in Figure 98.

Copper Hair Ornaments — Burials 6 and 7 (a double burial) of Mound 25 were each supplied with artificial copper noses (Fig. 24) and, in addition, with rod-like objects of copper on which, apparently, the hair

braids had been secured. These objects, shown in Figure 99, had been wrapped with cord, portions of which they still retain. Up to this time the finding of artificial copper noses and rod-like copper hair ornaments is unique in the Ohio mounds, and their significance, while presumably ceremonial, is puzzling.

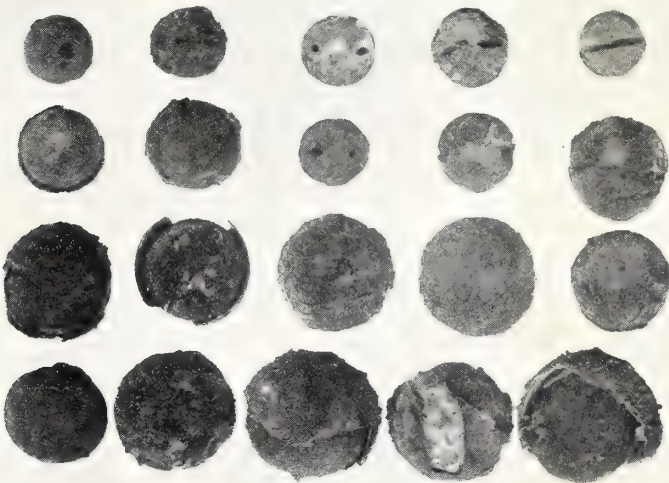


FIG. 98. Buttons of Wood, Clay and Stone, covered with Copper and Silver; from various burials of Mound 25. ($\frac{1}{2}$)

Stone Rings—The objects illustrated in Figure 100, from Deposit Number 1, of Mound 17, represent a rare but persistent type of Hopewell culture relics, the purpose of which is problematic. The specimen shown in Figure 101, from Burial 41, Mound 25, from its position at the side of the head suggests use as an ear ornament. An exceptionally handsome specimen from one of the basins of Mound 25, presented to the Survey by Mrs. Hopewell, is shown in Figure 102. It and the



FIG. 99. Copper Rods on which the Hair of Burials 6 and 7, Mound 25 Apparently had been Secured. ($\frac{1}{3}$)



FIG. 100. Stone Rings, Possibly Ear Ornaments, from Mound 17. (1/1)

specimen from Burial 41 are made from chlorite, while those from the deposit of Mound 17 are made from brown micaceous schist.

A number of these interesting objects were found by the Moorehead survey (p. 139) in Altar 1, Mound 25.

Perhaps no other type of Hopewell artifact exhibits so well the skill of the prehistoric workman as the stone rings. A number of them are practically true circles and suggest the employment of mechanical means of describing and executing circles. Their finish is strikingly good, and some of them have small perforations drilled through the circumference of the ring, as shown in Figure 101.

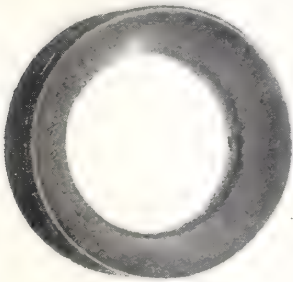


FIG. 101. Small, Finely Made Ring, of Chlorite; Burial 41, Mound 25. ($\frac{1}{4}$)



FIG. 102. Large Finely Made Chlorite Ring; Mound Number 25. ($\frac{1}{4}$)

Copper Head-plates — Helmet-like head-coverings of copper were found with a number of burials of the group. The simplest form of this ornament is shown in Figure 103, a specimen found with Burial 13, Mound 25. In Figure 104 is shown a more elaborate head-plate, found in Mound Number 7 and described in connection therewith.

A copper head-plate bearing an interesting scroll design is shown in Figure 105. This specimen had been deposited with Burial 4, of Mound 25. The design in this plate, resembling somewhat the imprint of a bear's foot, occurs rather frequently in the Hopewell art.

The most elaborate head-dress found by the present Survey is that illustrated in Figure 106, found with

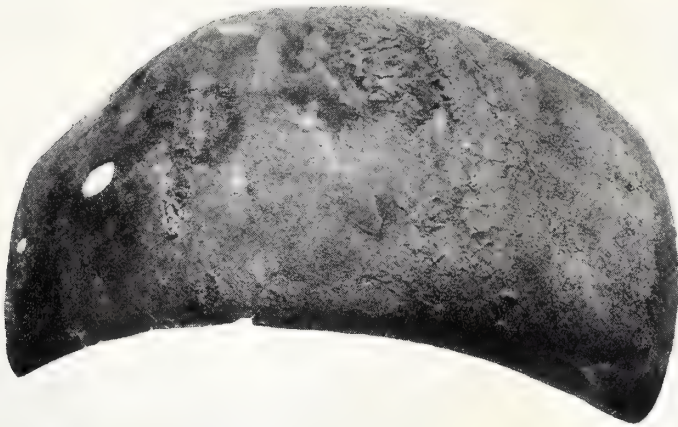


FIG. 103. Helmet-shaped Head-dress of Copper; Burial 13, Mound 25. ($\frac{2}{5}$)



FIG. 104. Ornate Head-dress of Copper; from Mound Number 7. ($\frac{1}{2}$)



FIG. 105. Copper Head-dress with Conventional Scroll Design; Burial 4, Mound 25. ($\frac{1}{2}$)



FIG. 166. Elaborate Head-dress of Copper, Mica and Pearls: Burial 11, Mound 25, 1939

Burial 11 of Mound 25. The head-dress consists primarily of a copper plate, curved to fit the crown of the head. Supplementing this are two wings made from pointed oval sheets of copper and decorated with rows of large pearls. The central plate of the head-dress is embellished by small designs cut from mica. The copper body and wings of the head-dress had been secured and supported by an underlying saucer-shaped form of wood, portions of which were preserved. In addition, there was a bonnet-like appurtenance of woven fabric which had formed the body of the head-dress and to which the copper portions had been attached. The pearls had been secured to the wings by means of cords, while the mica designs apparently were held in place between the copper crown and its supporting base of wood. In addition to the fragmentary remains of the cloth there were vestiges of the feathers and beaks of two birds, apparently small hawks. Moorehead found a number of copper head-dresses in the group, the most interesting of which was that with his burial 248, (p. 107) in Mound 25. While they have been present in most groups examined by the Museum, they appear to have been absent in the Turner group.

Copper Breast-plates — The term breast-plate may not be altogether justified as regards these objects, for while they are most frequently found on the chests of burials, they are often located elsewhere. They are one of the three or four most characteristic relics of the culture and are of very frequent occurrence. Of the several dozens taken by the Survey from various mounds of the group, the smallest is that shown in Fig-



FIG. 107. Copper Breast-plates; the Small Specimen from Burial 43 and the large One from Burial 35; Mound Number 25, (13)



FIG. 108. Copper Breast-plate to which Adheres Bark from the Covering of Burial Number 6, Mound 25. ($\frac{1}{2}$)

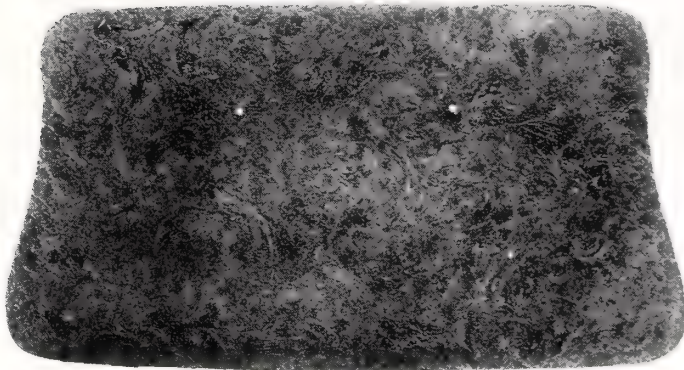


FIG. 109. Copper Breast-plate bearing Imprint of Feather Garment; from Burial 5, of Mound 25. ($\frac{1}{2}$)

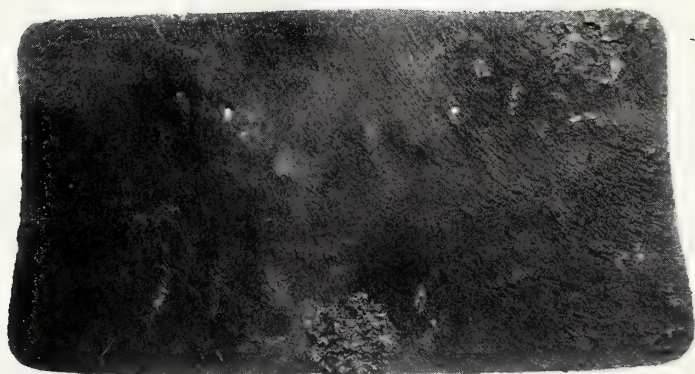


FIG. 110. Copper Breast-plate, from Burial 6, Mound 25, with Imprint of Fur Robe or Garment. ($\frac{1}{2}$)

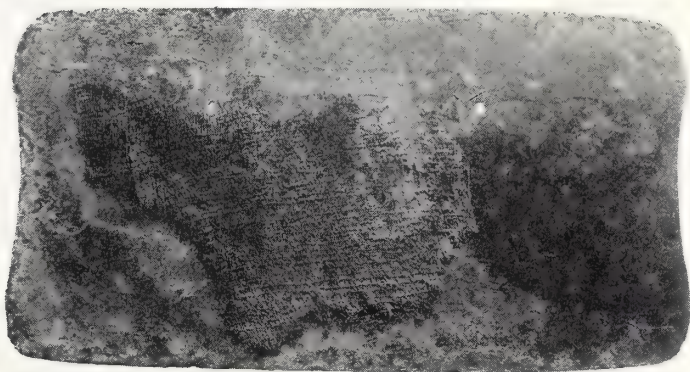


FIG. 111. Copper Breast-plate, to which adheres Woven Fabric; from Burial 41, Mound 25. ($\frac{1}{2}$)



FIG. 112. Large Copper Breast-plate, with Scroll Design; from Ceremonial Offering, Mound 26. ($\frac{2}{6}$)

ure 107 from Burial 43, Mound 25; and the largest, shown in the same cut, from Burial 35 of Mound 25. An interesting series of four typical plates is shown in Figures 108, 109, 110, and 111, from burials in Mound 25. In the order named, they show imprints of burial robes and garments of bark, feathers, fur and woven fabric.

A large plate decorated with comma-shaped scroll designs and with pearl beads marking the location of its perforations, is shown in Figure 112. This specimen is from the ceremonial deposit or offering in Mound 26. Fine examples of copper plates in scroll designs were found in the Seip Mound (p. 19).

Pendant of Fossil Resin — A pendant of fossil gum closely resembling amber is shown in Figure 113. This specimen was found by the present Survey at the site of Moorehead's burials 289-290, in connection with which he records (p. 114) the finding of a similar substance. The pendant apparently had been thrown out unnoticed from the grave, since it was found in disturbed earth immediately adjacent thereto.

So closely does the specimen, with its weathered exterior, resemble a small stone that but for the fact that the mattock of a workman struck and split it cleanly in two parts, it would not have been recognized. The illustration shows the pendant thus broken, the one portion depicting the weathered outer surface and the other the handsome interior. The object is pierced by double countersunk holes at the smaller end for suspension.

In color this specimen is a clear translucent orange-lemon, in every respect similar to amber. The appended

analysis, however, by Dr. H. W. Nichols, of the Field Museum of Natural History, shows it to be a distinct resin:

"The resin from the Hopewell mound is not amber. It is an amber-like resin formed by the oxidation of balsam from some undetermined species of abies.

"The Hopewell resin and true amber have the same softening points, 150 c.; the same fusing points, about 300c.; each carries a small proportion of succinic acid. Amber, on heating to decomposition, emits a powerful acreous odor, while the Hopewell resin gives off a strong balsam odor."

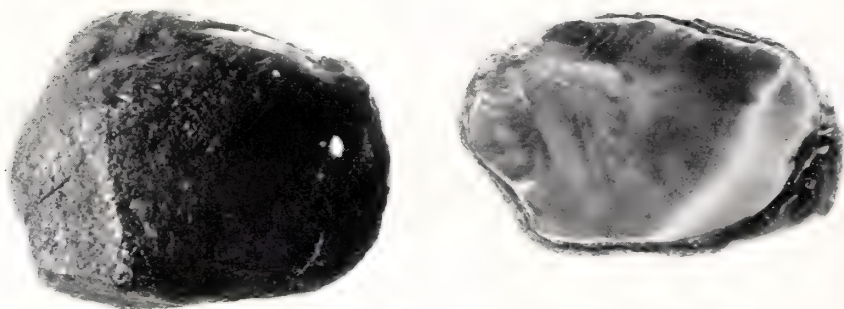


FIG. 113. Pendant made from a Fossil Gum Closely Resembling Amber; from Mound Number 25. ($\frac{1}{4}$)

Tortoise-shell Ornaments — The two specimens made of tortoise-shell, shown in Figure 114, are the best preserved of several found with Burials of Mound Number 25. The larger of the two (below) is from Burial Number 43, and is in an excellent state of preservation. Viewed by transmitted light, its rich colors appear undimmed. The specimen at the top was found with Burial Number 45. An interesting ornament of tortoise-shell from Mound 25 is illustrated by Moorehead (p. 112)



FIG. 114. Ornaments made from Tortoise-shell; above, Burial 45; below, Burial 32; Mound 25. ($\frac{2}{3}$)

Copper Gorget — The circular bossed ornament of copper, shown as Figure 115, is from the ceremonial deposit or offering in Mound 17. It has 13 bosses, nine of them arranged in the form of a cross with the remaining four filling in the angles.

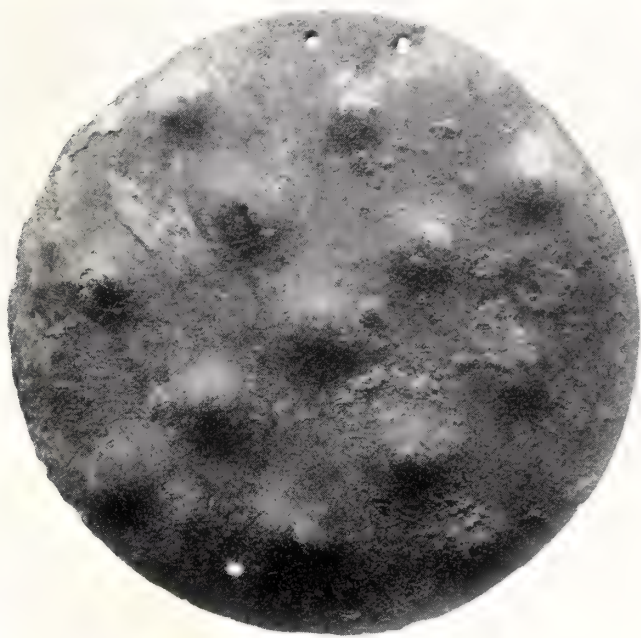


FIG. 115. Pendant or Gorget of Thin Copper, with Bosses, Mound 17. ($\frac{1}{4}$)

Copper Ornaments — The four objects illustrated in Figure 116 are from Burial 5, of Mound 25. From the manner of their perforation they appear to have been attached to fabric or clothing. Similar forms of this comma-shaped design were found in the Turner Group (Pl. 11).

Problematical Copper Object—The specimen illustrated in Figure 117, from Burial Number 1, Mound 20, is one of a series of similar objects, the purpose of which is obscure. For the most part they take the form of three conjoined cylinders, although made from a single sheet of copper. Of these specimens, Moorehead (p. 128) says: "There were (found) several copper

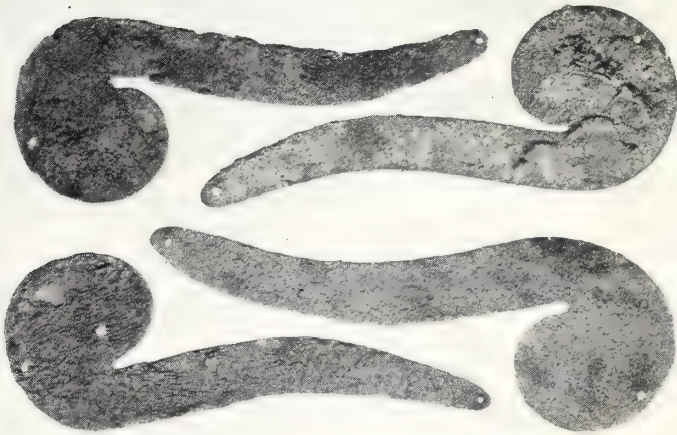


FIG. 116. Ornaments of Copper, found with Burial 4, Mound 25. ($\frac{1}{2}$)

cylinders, one of which is shown in (his) Fig. 22. These originally covered bone tubes. * * * Usually they appear to be a union of three cylinders." A specimen of this type, made from meteoric iron, was found by Putnam in the Turner Group (p. 51), while a specimen made of silver, taken from a mound at Marietta is described and figured by Atwater (p. 173). This specimen, described as having "three longitudinal ridges" appears in the cut to consist of five tubular sections.

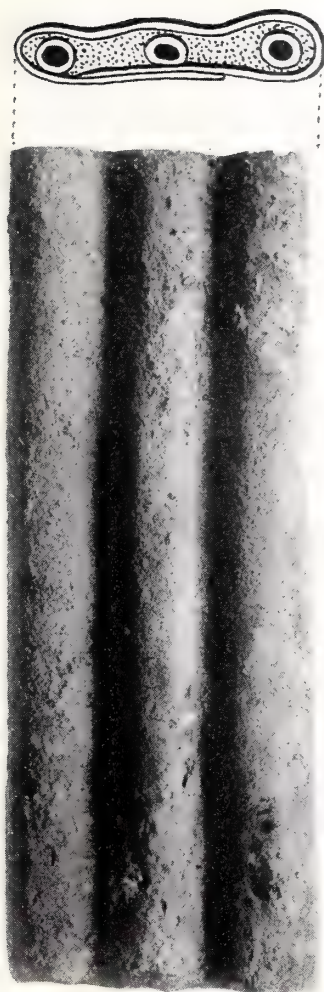


FIG. 117. Copper Object, in the form of Conjoined Triple Tubes; Mound 20. ($\frac{1}{4}$)

The present Survey found, with Burial 12, of Mound 25, a copper specimen of this type consisting of a single tube. In the Hopewell material at the Field Museum there are fragmentary specimens having from two to four tubes. From the evidence it would appear that specimens of this type were not confined to the triple tube form but ranged from one to five or more tubes.

Specimens examined all appear to have contained tubes either of bone or reed, the interstices being filled with clay. The reverse sides are flat, over-lapped, and usually bear one or more holes for attachment or suspension. Their form suggests a flute-like musical instrument and the presence in some specimens of fibers, cane or reeds, is taken by some to indicate their use as torches; neither suggestion, however, appears to account satisfactorily for the purpose of the objects.

CEREMONIAL (PROBLEMATIC) OBJECTS

While certain specimens considered under this heading have some of the characteristics of the preceding groups they are, for the most part, distinctive, in that there is no obvious explanation of their purpose aside from that of the ceremonial — a term which, perhaps pardonably, often serves in lieu of definite knowledge. The objects under consideration identify themselves mainly with a few well known types, such as the cones or hemispheres, bar amulets, gorgets, pendants, discoidals, plummets and boat-stones of the average collection of archaeological material found on the surface. With the exceptions noted, the following objects are all from the ceremonial deposits or offerings of Mound Number 17.

Cones or Hemispheres—In Figure 118 there are shown examples of the more than 50 cones made from iron pyrite or marcasite, from Deposit Number 2, Mound 17. These specimens offer an interesting study and are remarkable for the amount of labor expended in their manufacture. The objects for the most part

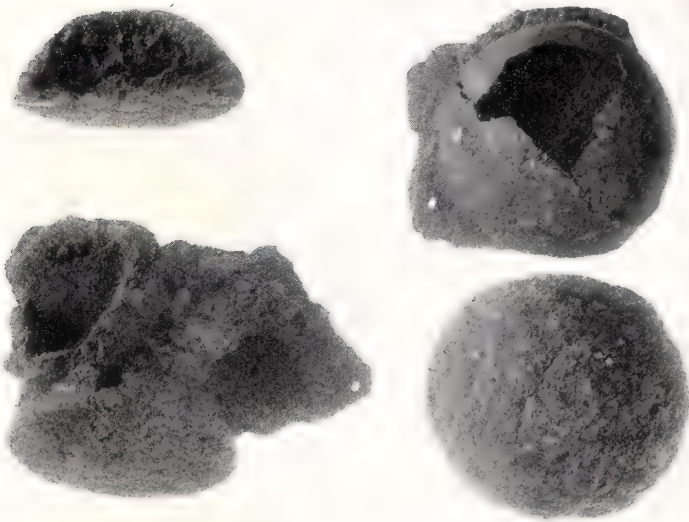


FIG. 118. Ceremonial Cone-shaped Objects of Pyrite; deteriorated; Mound 17. ($\frac{2}{3}$)

are greatly deteriorated, but in a striking manner. A glance at the cut shows the peculiar manner in which the interiors are decomposed, leaving only the characteristic spicules of the mineral, while the outer shells remain solid. In the lower right of the picture is shown a fresh nodule of pyrite, variety marcasite, from what is known as Copperas mountain, a few miles distant

from the Hopewell group, on Paint creek. It is suggested that this location was the source of the material for the pyrite specimens from Mound 17. While the natural nodules of pyrite from the Copperas mountain source often are more or less spherical, all the specimens of cones under consideration have been carefully ground into shape and polished.

Other specimens of cones and hemispheres from the same deposit, made of chlorite, presumably from the lower Alleghany region, are shown in Figure 119.

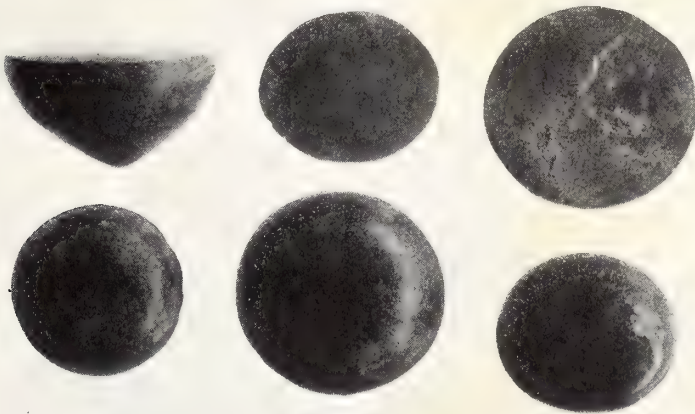


FIG. 119. Cone-shaped Objects of Chlorite; Mound 17. ($\frac{2}{3}$)

Bar-shaped Objects — Specimens shown in Figures 120 and 121 are made of varieties of chlorite and are from the offerings in Mound 17. The bar-shaped specimens illustrated in Figure 122 are made of pink fire-clay, or Ohio pipestone, and the two long specimens in Figure 123 are of a hard variety of clay slate, or argillite.



FIG. 120. Ornaments or Ceremonial Objects of Chlorite; Mound 17. ($\frac{1}{2}$)



FIG. 121. Bar-shaped and other Objects of Chlorite; Mound 17. ($\frac{1}{2}$)



FIG. 122. Bar-shaped Objects of Pink Ohio Pipestone; Mound 17. (2/5)



FIG. 123. Gorgets or Bars of Argillite; Mound 17. (2/5)

Tabular Objects — Four tabular specimens of chlorite are shown in Figure 124, while the two large specimens illustrated as Figure 125 are of greenish-black chlorite with large patches of brilliant mica. Figure 126 shows the large sandstone tablet which marked the center of the altar or basin containing the ceremonial deposit (Number 2) of Mound 17.



FIG. 124. Tabular Specimens of Chlorite; Mound 17. ($\frac{1}{2}$)

Disk-shaped Specimens — Two discoidal-shaped objects of sandstone are shown in Figure 127, while in Figure 128 is a finely made plummet-like object of siliceous slate.

Boat-shaped Objects of Crystal — Figure 129 illustrates a remarkable specimen found, with the two following ones, in Offering Number 2, Mound 17. It is made from yellowish crystal quartz and in form is somewhat funnel-shaped, unperforated.

The specimen in Figure 130 is made from a large clear quartz crystal and represents, in its execution, an unusual amount of labor since, presumably, it is as hard as any abrasive material used in fashioning it. In the

specimen shown as Figure 131, which is in most ways similar to the above, the artisan has permitted portions of the crystal face to remain, the characteristic striæ of which may be noted.

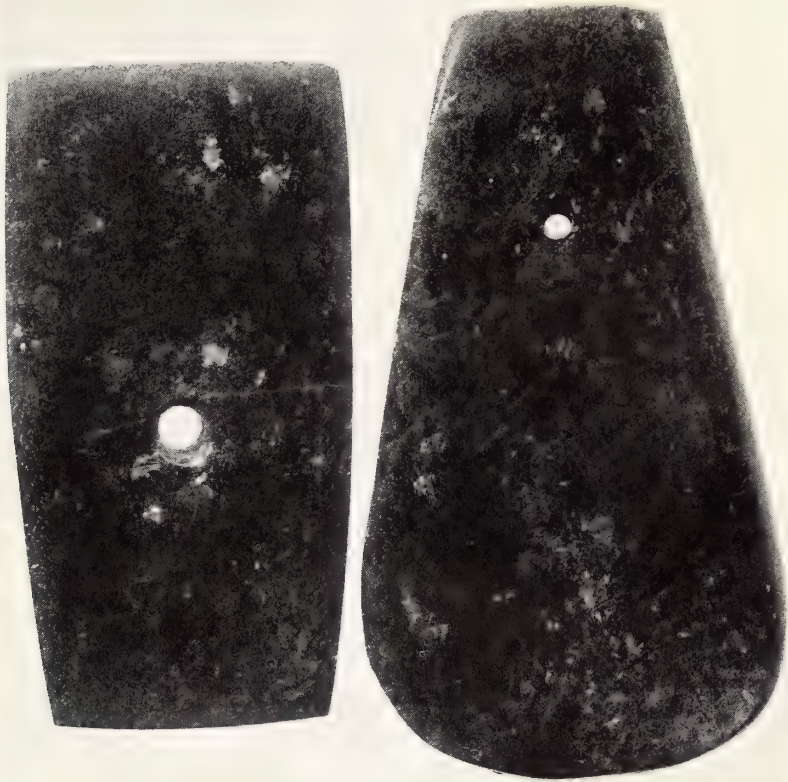


FIG. 125. Gorgets or Pendants of Chlorite; Mound 17. ($\frac{1}{4}$)

The objects of quartz crystal from these Offerings are most striking, particularly the hollow boat-shaped specimens. Two large discoidal-shaped specimens, included in the find in Offering Number 1 were, unfor-



FIG. 126. Large Sandstone Tablet, from Ceremonial Offering; Mound 17.
(38)



FIG. 127. Disk-shaped Specimens of Sandstone; Mound 17. ($\frac{1}{2}$)

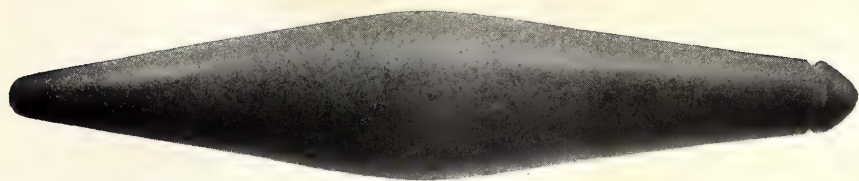


FIG. 128. Plummet-shaped Object of Granite; Mound 17. ($\frac{1}{4}$)



FIG. 129. Funnel-shaped Ceremonial Object of Crystal Quartz; Mound 17. ($\frac{1}{4}$)

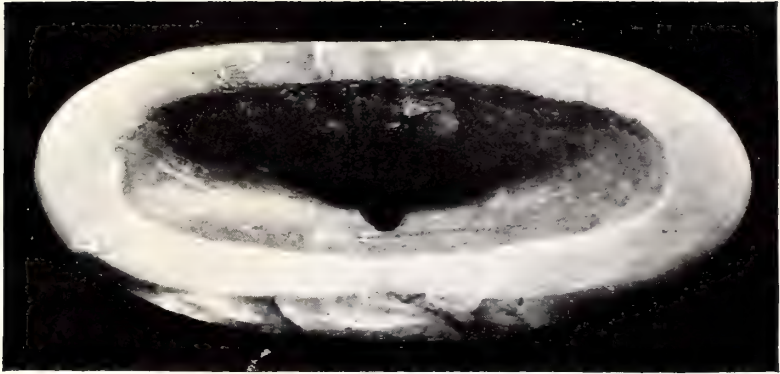


FIG. 130. Boat-shaped Ceremonial Object of Crystal Quartz;
Mound 17. ($\frac{1}{4}$)

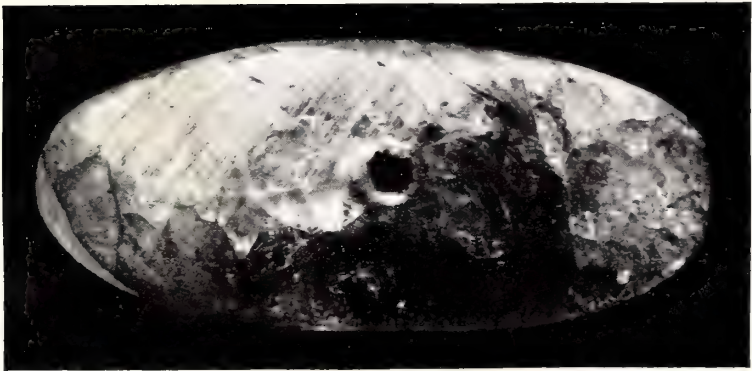


FIG. 131. Hollow Boat-shaped Specimen of Quartz Crystal; Mound 17. ($\frac{1}{4}$)

tunately, badly shattered, and it was impossible to restore them. Sufficient portions were found, however, very nearly to complete one specimen, which measures $3\frac{1}{2}$ inches in diameter and $1\frac{3}{8}$ inches in thickness.

Boat-shaped Objects in Effigy — Figure 132 illustrates a boat-shaped object of Ohio pipestone representing the hawk or eagle, with the eyes set with pearls. The head of the crow, made from black shale, is shown in Figure 133, found with the above in Offering Number 1, Mound 17.

Two remarkable boat-shaped effigies, found in Mound 25 by the Moorehead survey, are shown in Figures 134 and 135. The former, representing a raptorial bird, is made of handsome greenish chlorite. The object is extremely well made, the walls of the effigy being exceedingly thin. The remaining specimen, representing the otter with a captured shoveller duck is carved from bone. Two fine hollow effigies were secured by Putnam in the Turner Group (p. 70) and a number were found in the Tremper mound and at Mound City.

OBJECTS OF ARTISTIC CONCEPTION

There is hardly room for doubt that the Hopewell peoples had arrived at a stage of human culture where they conceived of "art for art's sake". Striking examples of æsthetic conception are the representations of the human form, sometimes representing the entire figure but more often only the head. The most pretentious effort in this direction so far disclosed are the terra-cotta full-length human figures found by Putnam in the Turner Group (p. 71).

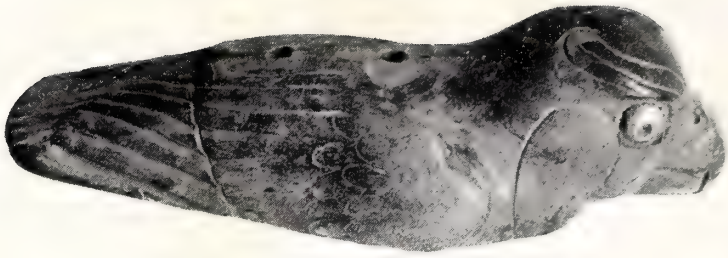


FIG. 132. Hollow Effigy of an Eagle; Ohio Pipestone; Mound 17. ($\frac{1}{1}$)

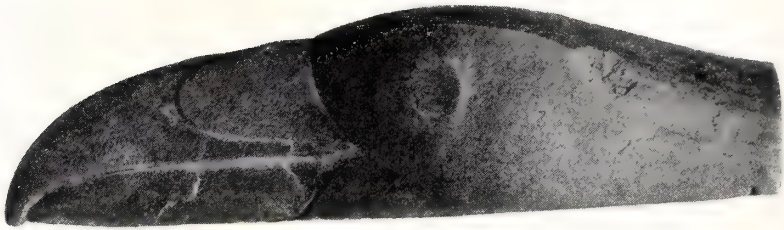


FIG. 133. Hollow Effigy of a Crow's Head; black shale; Mound 17. ($\frac{1}{1}$)

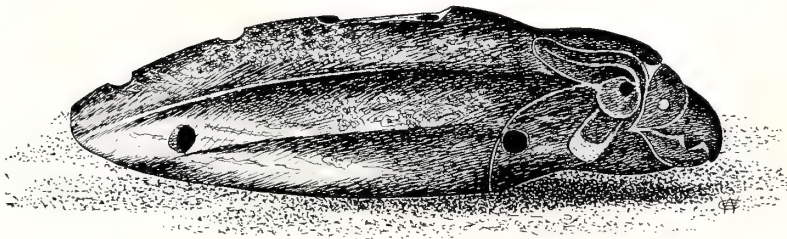


FIG. 134. Hollow Effigy of a Bird; green chlorite; Mound 25; former Survey. ($\frac{2}{3}$)

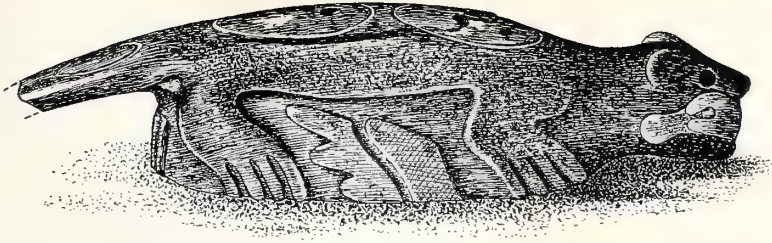


FIG. 135. Hollow Effigy of Otter with Duck; Mound 25; former Survey.
($\frac{2}{2}$)

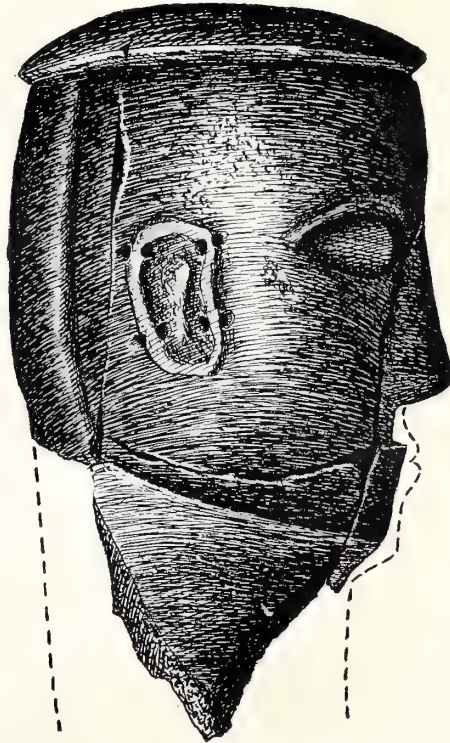


FIG. 136. Human Head Carved from Antler; Mound 25; former Survey. ($\frac{1}{1}$)

Human Effigies — Two interesting human effigies found by the Moorehead survey in Mound 25 are shown in Figures 136 and 137. The former, carved in antler, depicts a human head wearing a head-dress; the latter represents a human figure in a squatting position. A description of this effigy in the Moorehead report (p 163) reads:

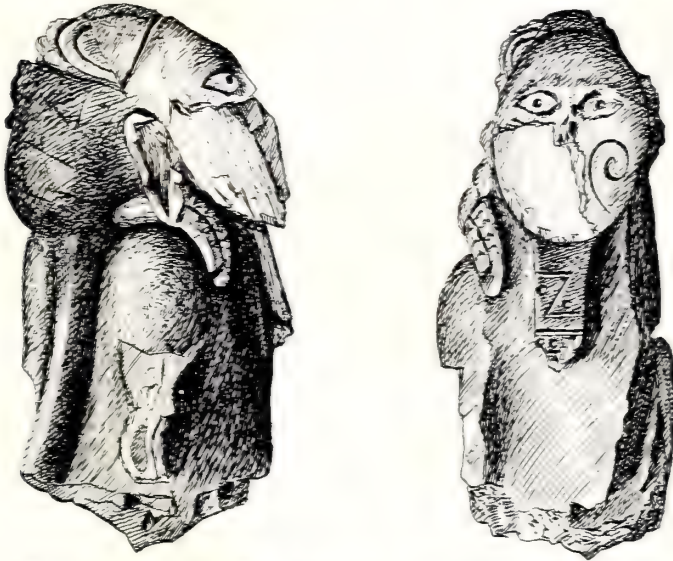


FIG. 137. Human Effigy in Fossil Ivory: Mound 25, former Survey. (1/2)

"The most noteworthy carving of the human figure recovered during the exploration is wrought from ivory, and like all of the ivory (fossil mammoth ivory) carvings from the altars, is very badly injured by the heat. * * * A convolute tattoo mark appears upon the cheek. An incised line across the upper part of the forehead marks the hair line, or indicates the front edge of a head-dress. Back of this line are two ear-like ornaments, one of which has been broken. An appendage * * * projects from the back of the head * * * The hair is gathered into a large chignon, and is apparently confined in a net. The meshes of the net seem to be represented by incised lines. From the bottom of the chignon, and extending downward along the

back, is a nearly flat projection which widens as it descends, and upon this falls a cue-like object with its lower end missing. The lower lobe of the ear is much distended by the insertion of a long curved ornament, evidently of the same form and material as the ear pendants obtained from each side of the neck of a skeleton in (Burial 278, Mound 25). A scarf-like object hangs from the neck with its lower end broken. Upon the uninjured portion is delineated a zig-zag line (Z-shaped.)”

A representation of a human head is shown in Figure 138. This specimen is made from thin copper and was found in Ceremonial Offering Number 1, of Mound 17.



FIG. 138. Human Head Wrought in Copper; Ceremonial Offering, Mound 17. ($\frac{1}{4}$)

Designs cut from Mica
—The mica figures found in the Hopewell group evidently partake of the ceremonial as well as of personal adornment. In several instances, however, they evince so much of artistic conception and execution that as a whole they seem to justify the present classification.

In Figure 139 are shown examples of a number of imitation bear canines, from Burial 42, of Mound 25; Figure 140 illustrates two designs from Burial 4, of the same mound. Several small designs and two shield-shape patterns from Burial 47, Mound 25, are shown in Figures 141 and 142. The image of an eagle's foot, from the same burial, is shown in Figure 143. This

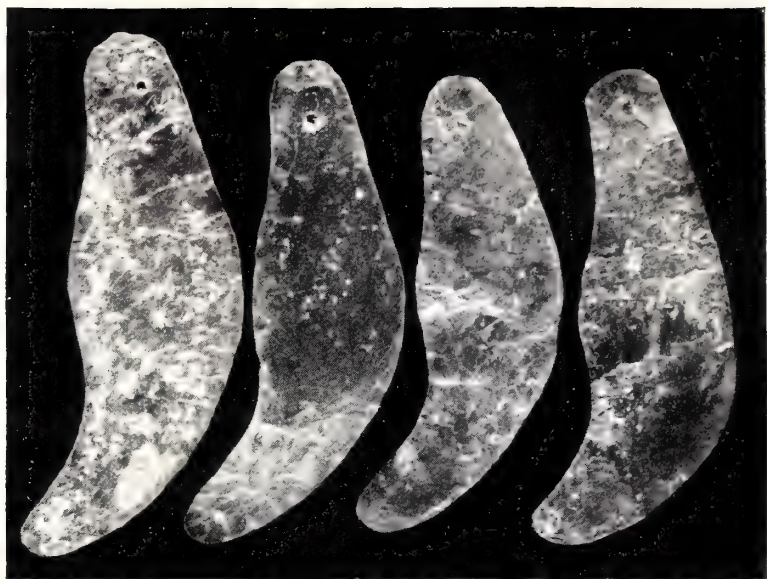


FIG. 139. Imitation Bear Canines in Mica; Burial 42, Mound 25. ($\frac{1}{1}$)



FIG. 140. Designs Cut from Mica; Burial 4, Mound 25. ($\frac{1}{1}$)
(282)



FIG. 141. Designs in Mica; from Burial 47, Mound 25. ($\frac{1}{4}$)

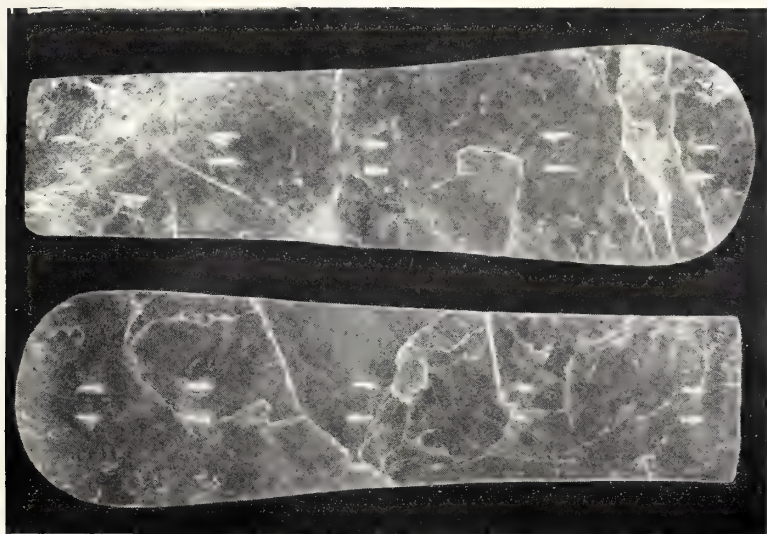


FIG. 142. Shield-shaped Designs in Mica; Burial 47, Mound 25. ($\frac{2}{3}$)



FIG. 143. Effigy of an Eagle's Foot in Mica; Burial 47,
Mound 25. ($\frac{1}{2}$)



FIG. 144. Image of the Human Hand in Mica; Burial 47.
Mound 25. ($\frac{1}{2}$)



FIG. 145. Ceremonial Spear-points of Mica; Burial 34, Mound 25. ($\frac{2}{3}$)



FIG. 146. Effigies of the Human Figure in Mica; Burial 34, Mound 25. ($\frac{1}{2}$)

remarkable specimen, together with the human hand, (Fig. 144) also from Burial 47, are exceptional examples of the artistry of the Hopewell peoples. The base of the eagle foot appears to have served as a hand-hold, and the juncture of the talons with the toes is marked by incised curved lines. The heel is greatly exaggerated. In the image of the human hand, while the thumb is realistic, the fingers are greatly elongated and conventionalized.

Two ceremonial spear-points of mica are shown in Figure 145. They, with the large human figure in Fig. 146 were found with Burial 34, of Mound 25. The smaller of the two human effigies was found in a log-mold of Mound 25.

The human effigies in mica, like one of copper found in Mound 13 of the Mound City group (p. 374) are headless. The smaller mica specimen, like that of copper from Mound City has perforations at the neck, suggesting either its attachment to clothing or fabric, or the attachment of a separate head, perhaps of different material.

The Turner Group yielded some striking figures in mica, some of which were painted in colors. These included (pl. 15) images of the bear and a grotesque human mask; and (p. 68) a plumed serpent.

Engraved Bones — With the exception of fragmentary specimens, shown in Figure 147, the present Survey found but little in the way of engravings on bone. Two of several fine examples found by the Moorehead survey are shown in Figures 148 and 149. The latter, from burial 281, Mound 25, is carved on a

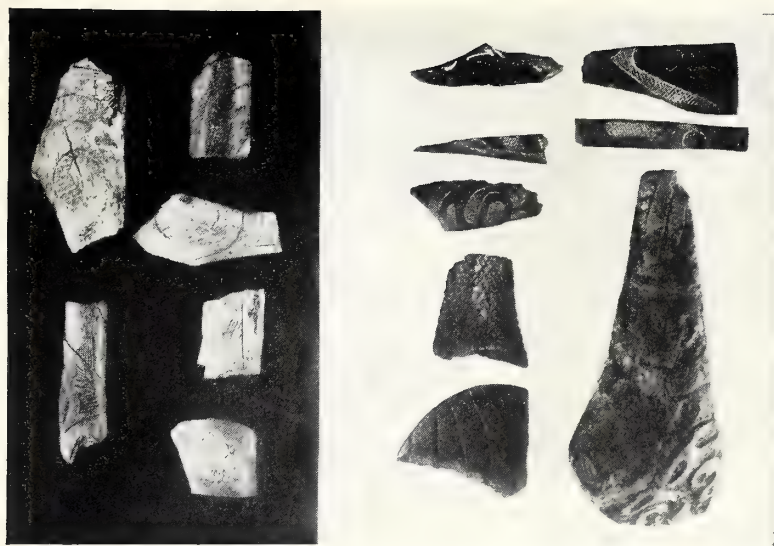


FIG. 147. Designs Carved on Bone; Mound 17. ($\frac{2}{3}$)



FIG. 148. Likeness of a Bird's Head Incised on Bone; Mound 25;
former Survey. ($\frac{1}{1}$)



FIG. 149. Conventional Design Carved on a Section of Human Femur; from Burial 281, Mound 25; former Survey. ($\frac{1}{1}$)

section of human femur. The Harness Mound (p. 63) yielded exceptional examples of engraved bones.

Designs in Copper—An unusual effigy object in copper, from Burial 35, Mound 25, is shown in Figure 150. The specimen is fragmentary and cannot be restored. In addition to what resembles the body and wings of an insect, there is the head and face of a human being which bears indications of having been supplied with horns or a head-dress. The curved body or tail of the insect, suggesting a dragon fly, is made from a separate piece, carefully secured in place by rivets.

No discovery of copper designs in the mounds is more striking than that of the Moorehead survey, taken from Mound 25 of the Hopewell Group. While lack of space precludes adequate illustrations of these unusual objects, outline drawings made from the more interesting specimens are presented, on a greatly reduced scale, in Figures 151 and 152. Particularly striking among these objects is the large conventionalized serpent-head (number 1) and its accompanying forked tongue; the fine large artistic figures suggesting the trefoil and quatrefoil (numbers 3, 4, 5), the fish (6), the comma-shaped design (8), and the swastikas (15). In addition to descriptions and cuts of these specimens in Moorehead's report, an exhaustive study of them by Willoughby will be found in the Holmes Anniversary Volume¹⁶ and, in collaboration with the late Professor Putnam,¹⁷ in *Symbolism in Ancient American Art*.

¹⁶ Willoughby, Charles C., *The Art of the Great Earthwork Builders of Ohio*, Holmes Anniversary Volume, Washington, 1916.

¹⁷ Putnam, Frederick W., and Willoughby, C. C., *Symbolism in Ancient American Art*, American Association for the Advancement of Science, Vol. XLIV, 1896.

Fine examples of copper designs in scroll and repoussé were found in the Mound City group (p. 353) and interesting specimens were taken from the Turner group (pl. 2).



FIG. 150. Effigy made from Copper; Burial 35, Mound 25. ($\frac{1}{4}$)

RAW MATERIALS AND THEIR SOURCES

Even a tentative list of materials utilized by the Hopewell peoples (many perishable items long since must have disappeared) and the probable sources from which they were obtained, affords a striking index to the extent of their commerce and travel. Whether the many materials from distant sources of supply were secured through barter with other peoples, or whether they personally made long journeys to obtain them is a question fraught with interest. Since practically none of the types of artifacts used by the Hopewell people are found elsewhere than on sites of their occupancy and

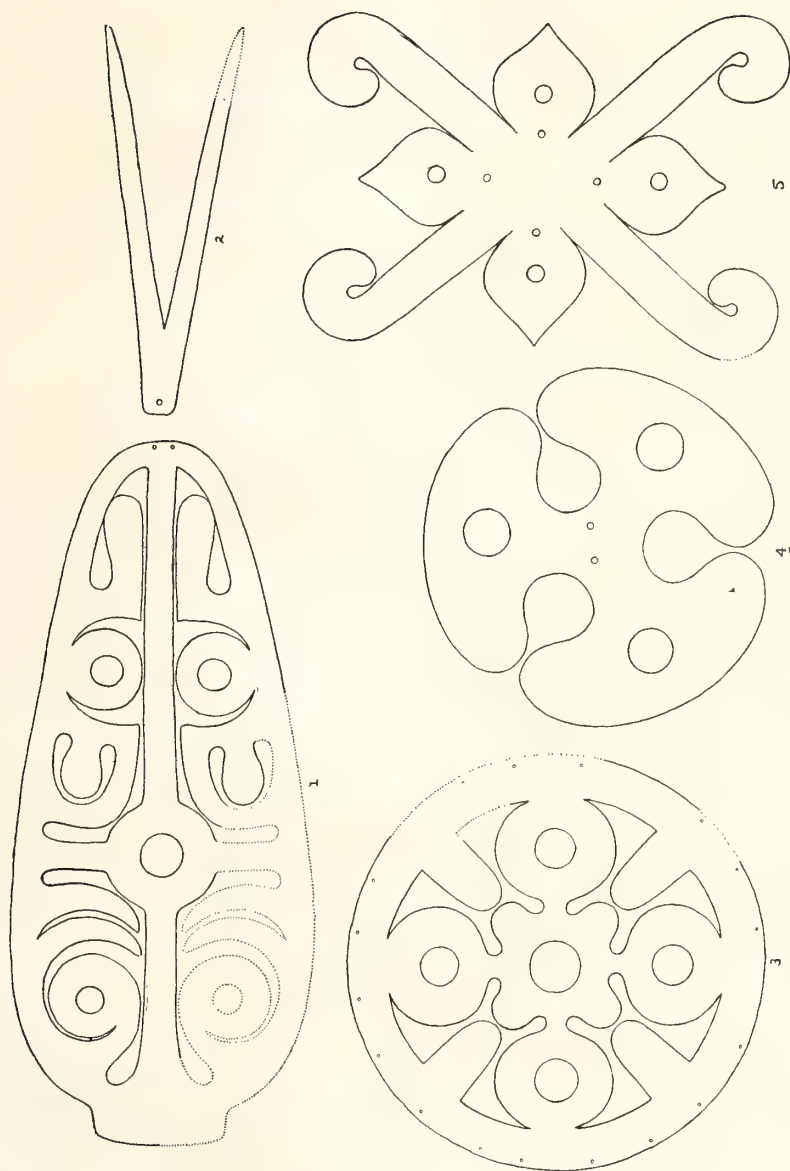


FIG. 151. Outline Drawings of Conventional Designs in Copper; from the Ceremonial Offering, Mound 25; former Su:vey. ($\frac{1}{3}$)

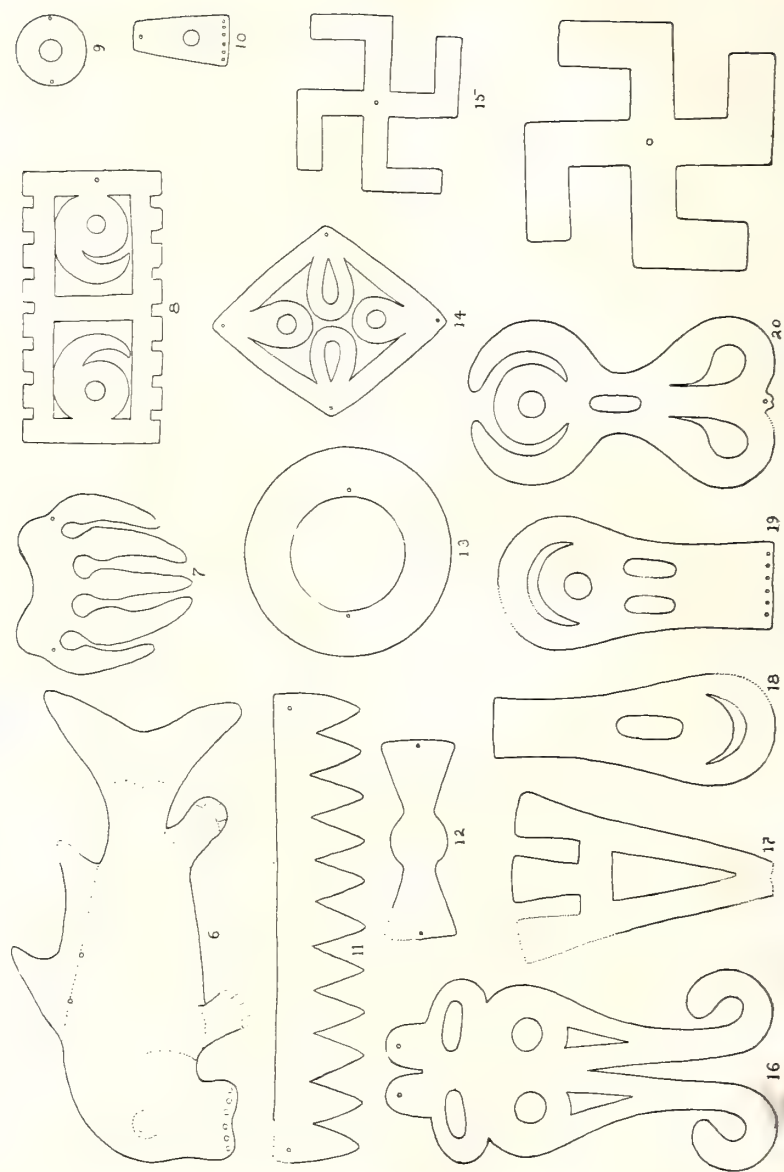


FIG. 152. Outline Drawings of Conventional Designs in Copper; from the Ceremonial Offering, Mound 25; former Survey. ($\frac{1}{2}$ in)

since, for the most part, they appear to have been manufactured where used, the evidence is in favor of the latter surmise. However, a certain amount of trade and barter doubtless obtained. The list follows:

Mineral Products — From the glacial drift, locally: granite, diorite, syenite, quartzite, argillite, and so forth.

From local deposits: sandstone, limestone, slate, shale, clay, and (probably) iron pyrite.

From nearby sources: flint and cannel-coal from Flint Ridge, Ohio; fireclay (Ohio pipestone) from Scioto county, Ohio.

From distant sources: quartz crystal, mica, chlorite, chloritic schists, mica schists, from the lower Alleghany region; copper, micaceous hematite and (probably) silver from the Lake Superior copper district; obsidian, from the upper Rocky Mountain district; concretionary and other flints from Indiana, Tennessee and (probably) Missouri; galena (probably) Illinois; graphite and meteoric iron, sources unknown.

Marine and Fresh Water Products — Shells, large and small; jaws and teeth (barracuda, alligator, shark); tortoise-shell; from the gulf region. Pearls, shells (mainly unio and leptoxis) from local and southern streams.

Animal Products: Bones, teeth, antlers, skins, fur, feathers and so forth, from local animals and birds; canine teeth of the grizzly bear, from the Rocky Mountain region.

Vegetable Products — Wood, bark, fiber and so forth from local trees and plants.

An unusual number of artifacts made from the Lower Alleghany series of chlorites and allied minerals, together with many worked and unworked pieces of the material, including the so-called gold-stone, were found in Mound Number 17. Large chunks of graphite, of exceptional quality, and many pounds of micaceous hematite of the foliated highly lustrous variety, exactly similar to that now being mined at Marquette, Michigan, were in the same deposit. Neither of these two minerals, however, had been worked into artifacts.

Several pieces of galena and a single large bead thereof, were found.

Considerable speculation exists as to the source of the meteoric iron found in mounds of the Hopewell culture. The fact that several important materials used by the Hopewell peoples were secured in the far west suggests the possibility of the same general source for the meteoric iron. The noted deposit at Canon Diablo, Arizona, may well have been known to and utilized by native tribes.

THE SKELETAL REMAINS

Anticipated professional study of the skeletal material from the Hopewell group was not forthcoming in time to be included in the present report. It is hoped that this later may be presented in a separate paper. Sex identification, measurements, and so forth, where attempted are therefore tentative.

An exhaustive study by Earnest A. Hooton¹⁸ of the skeletal remains from the Turner group is appended to the report thereon.

¹⁸ Hooton, Earnest A., *The Turner Group of Earthworks*, Notes on the Skeletal Remains, Peabody Museum of American Archaeology and Ethnology, Vol. VIII, No. 3, 1922.

IV

OBSERVATIONS AND COMPARISONS

With the completion of the Hopewell explorations a considerable amount of data pertaining to the culture in Ohio becomes available. A total of six major groups now have been examined and reported — the Harness Mound (Liberty group); the Seip Mound (Seip group); the Turner Group; the Tremper Mound; the Mound City Group; and the Hopewell Group.

A digest of the literature covering examinations of these several groups discloses some interesting features and comparisons. Certain characteristics are entirely constant while others, always present, have undergone modifications. A surprising number of local traits are found with one or more groups which are entirely lacking in others.

All six of the groups occupy commanding positions adjacent to their respective rivers and streams. While there are no resemblances between any two of the groups sufficiently striking to afford conclusive evidence of the proposition, there is an apparent tendency for the six groups to arrange themselves into three pairs: the Hopewell and the Turner groups; the Mound City group and the Tremper mound; and the Harness and the Seip mounds. This seems to be indicated not alone by external physical characteristics, but by internal and minor features as well. Members of the first-named pair — Hopewell and Turner — each comprises two conjoined enclosures, near-geometric in form, within which

their respective groups of mounds are situated. In the second pair — Harness and Seip — the resemblance is most striking. Each consists of a large circular segmented enclosure, containing a central mound and one or more smaller mounds, and adjoining this main enclosure a smaller circular and a square figure, neither of which contains mounds.

In the instance of the Mound City group and the Tremper mound, while there is the distinctive difference that the one is a group of mounds and the other a single tumulus, their accompanying earthworks appear to have served the single purpose of enclosures. In neither instance was the enclosure striking in dimensions or form, as in other groups noted. Further similarities may be noted in the appended tables.

As to physical features of the individual mounds, there are striking similarities and differences. The floors of all are quite similar in being leveled, smoothed and covered with coarse sand or gravel.

The Mound City group alone of those examined by this institution presented definite and intentional stratification, presumably ceremonial, and varying from one to four strata in a mound. In addition, the interior primary mounds bore similar coverings consisting of a single stratum of sand or fine gravel. The interior mounds at Hopewell were similarly marked.

The Turner Group also exhibited ceremonial strata, apparently extending through the extent of the mounds. This group presents the novelty of entirely level horizontal strata in a number of its mounds.

Low walls or circumvallations of stone and coarse gravel were found to circumscribe the margins of

mounds in the Hopewell and Turner groups and in the Harness and Seip mounds. External or sub-surface coverings of stones or coarse gravel obtained in these four instances and at Mound City.

Delineation of the outer margins of mounds and floor-space within them by upright posts or timbers was found in Mound City, Tremper, Harness and Seip. These were absent at Hopewells, but were accompaniments of the characteristic interior or primary mounds of its larger tumuli. In the Turner group, posts are indicated promiscuously throughout the floor spaces, but none are shown as marginal delineations.

Crematory basins of large size characterized Mound City, Tremper, Harness and Seip, while in Hopewell and Turner they were uniformly small.

Pretentious log structures were the rule in connection with graves at Hopewell, while in Harness and Seip they were unimportant and sometimes altogether lacking. No timbers were found with burials at Tremper's and none are indicated in the report on the Turner group.

Cremation of the dead preponderated over non-cremation at Mound City, Tremper, Harness and Seip, while the reverse is true of Hopewell and Turner.

The accompanying tables of comparisons are not intended as exhaustive studies of the phases with which they are concerned. They are offered merely as tentative bases for future comparisons and deductions:

PHYSICAL FEATURES OF THE MOUNDS

	Hopewell Group..	Turner Group....	Mound City Group	Tremper Mound..	Harness Mound..	Seip Mound
Stratification extending entirely through mounds: obviously intentional and ceremonial.....		x	x			
Gravel Strata covering primary (interior) mounds	x		x			
Low Wall or Ridge of gravel, stones and earth delineating outer margins of mounds	x	x			x	x
Covering of stones and gravel over tops of mounds.....	x	x	x		x	x
Delineation of outer margins of mounds (or compartments thereof) by vertical timbers or posts.....			x	x	x	x
Posts delineating margins of interior primary mounds only.....	x					
Posts scattered promiscuously throughout the floors of mounds; no circumferential arrangement....		x				
Crematory Basins large.....			x	x	x	x
Crematory Basins small.....	x	x				
Pretentious Structures of logs erected over burials	x					
Log Structures over graves unimportant or lacking.....			x		x	x
Log Structures over Graves lacking or not reported.....		x		x		
Mounds in which cremation of the dead predominated			x	x	x	x
Mounds in which non-cremation predominated	x	x				

In addition to these tabulated characteristics, individual mounds of the several groups presented traits and phenomena entirely local in their significance. In the Hopewell group the most striking of these was the supposed large mosaic of stone located near the top of the great central mound. The Turner Group is distinguished in having displayed abundant evidences of occupation and residence; in possessing a distinct cemetery in which the majority of burials there were found; for the existence of highly specialized stone graves and of sub-floor burials in the mounds; for a carefully constructed stone wall in one of its mound and for the presence in several others of level horizontal ceremonial strata. The remarkable series of what are termed tunnels, pits and flues found in mounds of this group have not been noted elsewhere.

The Mound City group presented, among other innovations, a large excavated basement beneath its central mound. The Tremper mound is unique in that it is the only known tumulus of first importance of the culture to stand alone and isolated from other mounds.

The Harness Mound proper and minor mounds of the Harness (Liberty) Group displayed little or no deviation from what is typical of the culture as a whole. This is true also of the Seip Group, in so far as the data accruing from the examination of the lesser of the two large mounds is concerned. However, the great central mound, exploration of which is now under way, promises to reverse much of the evidence for the Group as a whole.

A comparative study of artifacts and materials from the several Groups is presented in the following table:

RELATIVE OCCURRENCE OF ARTIFACTS

Legend: A — found abundantly M — found moderately R — found rarely.	Hopewell Group...	Turner Group ...	Mound City Group	Tremper Mound..	Harness Mound..	Seip Mound
Cloth or Woven Fabric.....	A	M	M	A	M	A
Pottery-ware (Vessels or Sherds)	M	M	M	R	M	M
Vessels or Containers of Marine Shell	A	A	A		M	R
Stone Celts, or Axe Blades.....	A	R	R	R	R	
Copper Celts: Axe and Adze Blades	A	R	R		M	M
Needles, Awls and Perforators of Bone	M	A	M	R	M	R
Flint-flake Knives	A	A	M	M	A	M
Chipped Flint Blades and Points	M	R	M	R	M	M
Chipped Blades and Points of Obsidian	A	R	M		R	
Platform Pipes of Stone, Plain type	M	M	M	A	M	
Platform Pipes of Stone, Effigy type	R		A	A		
Beads made of Shell.....	A	A	A	R	A	M
Pearl Beads and Pearls.....	A	A	R	R	M	R
Beads made of Copper.....	R	R		M		
Animal Teeth and Jaws, Cut or Worked	M	A	M	M	A	R
Bear Canine Teeth, Used as Ornaments	A	R			M	M
Spool-shaped Ear Ornaments of Copper	A	M	R	R	M	M
Bracelets made of Copper.....	M	R			R	
Metal-covered Beads and Buttons	A	M	R	R	R	R
Curved Head-plates of Copper..	M		R		M	
Breast-p'lates of Copper.....	A	R	R		M	A

RELATIVE OCCURRENCE OF ARTIFACTS — CONCLUDED

	Hopewell Group..	Turner Group ...	Mound City Group	Tremper Mound..	Harness Mound..	Seip Mound
Metallic Tubular Objects; Copper, etc.	M	R				
Copper Conventional Designs...	A	M	A	R		
Ceremonial Rings of Clay and Stone	A	M		M		
Ornaments of Tortoise-shell...	M	R				R
Stone Ceremonial Objects; Gorgets, Cones	A	R	R	A	M	R
Hollow Boat-shaped Ceremonial Objects	M	A		M		
Effigies of the Human Head or Figure	M	A	R		R	
Conventional Designs Cut from Mica	A	A		R	M	M
Engravings on Bone, Shell, etc..	M	M			R	
Human Jaws as Trophies or Ornaments	M				A	
Human Skulls as Trophies.....	M	A				
Quartz Crystal, Chipped or Ground	A		M	M	R	
Silver and Silver-Covered Objects	A	M	M		R	
Meteoric Iron and Objects thereof	A	M			R	
Galena (lead ore) and Galena Objects	A	R	R			
Cannel-coal and Objects Thereof	M	A				

The above table does not include many minor objects in common use nor local materials such as vegeta-

ble, animal and mineral substances. Neither does it include artifacts or materials peculiar to a single group.

In the Hopewell Group there were found the following objects not noted in other groups: a series of abrading or grinding stones; dishes of stone; large flint disks; very large obsidian blades; artificial copper noses and copper hair-rods; pendants of fossil amber-like gum; many problematical forms in stone; hollow objects fashioned from quartz crystals; and a remarkable series of artistic conventional designs in copper. Among the raw materials found are iron pyrites, micaceous hematite and graphite.

The striking features of the finds of artifacts at the Turner group are human figures in terra-cotta and thin sheets of gold, pounded from small nuggets. Painted effigies of mica and engraved hollow stone effigies are other features.

Outstanding features of the Mound City group were a large number of effigy platform pipes and many conventional designs in copper. A similar deposit of effigy pipes was the feature of the Tremper mound.

The following comparative table of burials in the six groups is based on the published reports of their examinations. In some instances the data appear not to be sufficiently exact, in which case they are not made use of. In the Hopewell group the former survey disclosed more than 150 burials, but since cremated burials are not taken account of, or at least are not differentiated from uncremated ones, these are made unavailable as a basis for comparisons.

In the case of the Turner Group it should be noted that the greater number of the total of 65 burials were

taken from the cemetery of the group, the existence of which would seem to account for the comparatively few burials in the mounds proper.

COMPARATIVE TABLE OF BURIALS

	<i>Total burials</i>	<i>Cremated burials</i>	<i>Uncrem. burials</i>	<i>Per Cent. cremated</i>	<i>Per cent. uncrem.</i>
Hopewell Group	85	32	53	37	62
Turner Group.....	65	10	55	15	85
Mound City Group...	97	97	..	100	..
Tremper Group.....	3	3	..	100	..
Harness Mound.....	172	163	9	95	5
Seip Mound*.....	48	43	5	90	10
Totals	470	348	122	74+	26—

* Since this table was prepared the examination of the great central mound of the Seip Group has been begun. Although the work has progressed only a short ways, it appears that uncremated burial obtains to a great extent, a factor which in the end may decidedly change the burial data for the group. Furthermore, the phenomenon of skulls supplied with artificial copper noses and copper hair rods, up to this time unique outside of the Hopewell Group, has been disclosed in the Seip Group.





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